

DEC 3 1919

Registered at the G.P.O., Sydney, for Transmission by Post as a Newspaper.

Published Weekly.

THE
MEDICAL JOURNAL
OF AUSTRALIA

(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated.)

The Journal of the Australian Branches of the British Medical Association.

VOL. II.—6TH YEAR—No. 18. SYDNEY: SATURDAY, NOVEMBER 1, 1919.

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THE MEDICAL JOURNAL OF AUSTRALIA.

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SYDNEY: SATURDAY, NOVEMBER 1, 1919.

No. 18.

THE AFTER-EFFECTS OF GAS-POISONING, WITH SPECIAL REFERENCE TO THE LUNG LESIONS.

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*Beauey Scholar in Pathology,
University of Melbourne.*

The early lesions of gas-poisoning have been carefully studied and the published accounts of the pathology and symptoms are thorough and complete. (1) The later results, however, appear to have received scant attention and considerable misapprehension as to their nature seems to exist. Apart from the recently published summary of the findings of Achard, of Paris, (2) the available references consist of casual allusions to "The Chronic Neurasthenia Following Gas-Poisoning." Some account, therefore, of the condition as observed in upwards of 150 patients presenting themselves for treatment at No. 5 Australian General Hospital since April last may be of interest.

Class of Cases Dealt With.

The cases in this series are those considered suitable for treatment as out-patients by the medical boards which examine all men returning from active service on disembarkation. Those showing gross physical lesions are necessarily excluded, since they are treated as in-patients. In addition to those with less severe lesions, the series includes many patients with a history of "gassing," who complain of a variety of symptoms, but in whom physical signs are slight or absent. Many of the patients were gassed in the Ypres sector in the latter part of 1917, many in the fighting between April and November, 1918, and some at other times. No reliable estimate of the average duration can be made, but the cases may be fairly regarded as presenting the late lesions. In general, therefore, they are patients exhibiting the less severe after-effects of gas. For statistical purposes, a recent consecutive series of fifty cases has been utilized and, where definite figures are given, they refer to this group.

Ætiology.

Owing to the general absence of documentary evidence as to the particular type of gas encountered in individual cases and the difficulty of identifying it from the patient's description of its immediate effects, it has been found impossible to make detailed comparisons between the different gases as regards their potency in producing lasting lesions. Frequently, too, there is a history of more than one gassing. Furthermore, to compare the late effects of different gases would necessitate a knowledge of the total number of men exposed to each throughout the war. Even in the absence of such data, however, certain broad conclusions may be stated as follows:—

Those gases which cause serious after-effects belong to the lung-irritant and vesicant groups and the physical lesions are almost confined to the lungs.

Mustard gas, which may be readily identified from

the description of its immediate effects, seems particularly potent in causing lung lesions.

Several apparently slight exposures to gas may cause serious after-effects. Though the majority of the patients give a history of immediate evacuation after gassing and hospital treatment for four to six weeks, not a few state that they were gassed on one or more occasions, but did not report sick, or were not considered sufficiently ill to be evacuated. Evacuation to hospital or otherwise is not a reliable indication of the severity of the immediate effects, since the battle conditions and the personal equations of both the man and his regimental medical officer are unknown.

Pathology.

It is not proposed to discuss fully in this place the morbid anatomy of the lung lesions found in recent gassed men. Some account, however, of those aspects of the condition which bear directly upon the later results cannot be omitted.

Reference to the collection of war specimens in the Pathology Department of the Melbourne University shows that the most severe and constant immediate effects of gas poisoning are seen in the trachea, bronchi and smaller tubes and in the blood vessels of the bronchial walls.

In the tubes, the lesions show all grades of severity, from a toxic spoiling with a small amount of exudation, to an intense necrosis with widespread formation of false membrane. In intermediate grades ulceration frequently occurs. Microscopically, the varying degrees of damage to the mucosa may be seen and the submucosa is found to be thickened and infiltrated with cells. In the more severe cases the infiltration and swelling is of such degree that the surface of the tube is thrown into folds and the bronchial cartilages may show signs of disintegration. In the most severe cases, all traces of the structure of the walls disappear and the position of the tube is indicated by an abscess cavity. The blood vessels of the bronchial walls are intensely congested and many of them contain thrombi.

From the tubes the process spreads into the surrounding alveolar tissue, which shows œdema, infiltration with polymorphonuclear and small round cells and sometimes patches of hemorrhage. Between these broncho-pneumonic areas, the alveoli are often seen to be distended, with a tendency to open into one another, as if by acute emphysema. As early as the tenth week, considerable peri-bronchial and peri-vascular fibrosis may be observed.

Opportunities for the examination of lungs showing the later lesions are few, but it is obvious that in cases of even moderate severity, more or less permanent after-effects will follow. Some peri-bronchial and peri-vascular fibrosis, some permanent damage to the epithelium of the bronchi and tubes generally and some enlargement of the hilum and posterior mediastinal glands from the continued drainage of inflammatory products may all be expected,

Symptoms.

The symptoms which occur in these cases are almost constant and, in the main, are directly referable to the lung lesions and the impairment of general health which follows them.

Cough occurs in 98% of the cases. It is generally worst on rising in the morning, but sometimes is sufficiently bad at night to interfere with sleep. There is commonly profuse expectoration, either blackish or white and copious. In 13% the cough is of such paroxysmal nature that it frequently induces vomiting, especially in the morning, before breakfast. In estimating the value of these symptoms, it should be remembered that the majority of the patients are heavy cigarette smokers.

Another almost constant symptom is shortness of breath, which is present in 92% of cases. In no instance in this series did it occur at rest, but it is commonly induced by even slight physical effort. Many patients are able to walk comfortably, but the attempt at any more active exertion produces dyspnoea.

Palpitation and pain in the precordial area are sometimes associated with the dyspnoea; they occur in 20% and 27% of the series respectively. In the main, they are induced by similar circumstances, but, in those cases in which the neurotic element is marked, any emotion or excitement often suffices to bring on an attack of palpitation. A few of the patients complain of pain between the shoulder blades, caused by rapid movements of the trunk; it is probably associated with pleuritic or mediastinal involvement.

In more severe cases, vigorous exercise sometimes causes dizziness and giddiness in addition to the foregoing symptoms. This condition was noted in 9% of the series.

Frequent colds occur in 15% and loss of weight is of such degree as to attract the notice of the patient in 10% of the cases. On further enquiry, many other patients are found to be below their normal weight and, for a short time after the return to home conditions, the majority continue to lose flesh. Under treatment, however, a gain in weight usually occurs and its rate and degree are, in some measure, indicative of the general progress.

Pain and discomfort after meals are occasionally complained of, but no constant digestive symptoms are associated with the condition.

In addition, nearly a quarter of the total number of patients present one or more of the group of symptoms which may, in the present state of our knowledge, be classed together as "neurotic" or "neurasthenic." Briefly, this group includes shakiness, sweatiness, irritability, lack of concentration, anorexia and a vague, distressing feeling of physical unfitness. Such symptoms frequently occur independently and are often found in patients suffering from conditions other than "gassing."

Physical Signs.

Of the physical signs, the most important are those indicative of lung lesions and it is noteworthy that these were present in 80% of the cases in this series.

In no instance was there any gross physical deformity of the thorax.

With the patient at rest, the respiratory movements are shallow, but, after moderate exertion, the breathing in most cases becomes laboured.

Changes in the percussion note are demonstrable in all cases showing physical signs referable to the lungs. In the less severe cases there is a small, triangular area of impaired resonance in the right inter-scapular region, its apex being at the second dorsal spinous process and its base running horizontally from the fifth spine to the vertebral border of the scapula. In such cases, the percussion note in the left inter-scapular area remains unimpaired. In more severe cases, this triangular area of relative dullness extends laterally and downwards, until it involves a variable amount of the upper portion of the lowest lobe of the right lung; but in every instance a band of resonant lung tissue is found below the area of impairment. In the most severe cases of this series, the dullness in the right inter-scapular area changes from relative to absolute and extends very slightly across the mid-line to the left side. In addition, in cases of moderate severity, there is impairment of the percussion note at the right apex and, in the most severe, at the left apex also. In only three cases of this series was the note over the left lower lobe altered and all of them presented other signs and symptoms in very marked degree. In a few instances, the apical dullness was the most prominent sign, but all of the patients showed the right inter-scapular area of defective resonance as well. In very few cases was any large area of absolute dullness found; indeed, the changes in the percussion note are of degree only and may easily be overlooked.

The vocal fremitus is, as a rule, markedly increased over these areas of impaired resonance.

On auscultation over the same areas, and sometimes at the left base as well, a type of vesicular murmur is heard which is difficult to classify under any of the usual headings. Possibly "broncho-vesicular" most nearly describes it. There is prolongation of expiration and the sound is rather hollow and slightly raised in pitch, as though the vesicular element were lessened, but not abolished, and the glottic element exaggerated.

The vocal resonance is usually somewhat increased, but not to the same extent as the voice fremitus.

Three cases only presented gross signs of patchy emphysema.

In only six of the cases were adventitious sounds present; in all instances fine sibilant rhonchi. In three of them the adventitia cleared up after a few weeks in this climate, but in the three cases with gross emphysema they have persisted.

The heart lesions are much less constant. The apex beat is frequently displaced 1.25 to 2.2 cm. outwards, but in none of these cases was there any gross displacement by traction of fibrous tissue. The "effort syndrome" is very commonly present. In only one instance were definite signs of a valvular lesion found. Cyanosis was not observed, but in some of the more severe cases there is a dusky red tint of the lips and face, intensified by exertion.

The sputum of the great majority of patients was examined, often on several occasions, but in no instance were tubercle bacilli detected.

In the few cases in which it was investigated, the Wassermann reaction was found to be negative.

Radiographic Examination.

An X-ray examination was made of all patients in this series who showed any physical signs, however slight. In 65% of those examined, definite changes in the lungs were observed; in 20% there was slight abnormality, but no very definite lesions were visible; and in 15% the lungs appeared normal. The nature of the X-ray appearances is discussed by Dr. C. E. Dennis in another paper.

Diagnosis.

There is often great difficulty in excluding pulmonary tuberculosis, especially in those cases with dullness and fine rhonchi at one or both apices. The history of gassing, the fact that the dullness is seldom confined to the apex, the absence of tubular breathing and the character of the moist sounds, are all suggestive but not conclusive. In many cases it is absolutely necessary to insist on at least three negative examinations of the sputum for tubercle bacilli before a definite conclusion can be reached.

Prognosis.

Of the prognosis one can say nothing very definite at this stage. The possible supervention of a tuberculous process must always be borne in mind, but the findings in this series accord with those of Achard, who reports that such a disaster is much less common than might have been expected. Much careful and prolonged observation is yet necessary to determine to what degree "gassed men" will ultimately recover.

Treatment.

The treatment of the condition has so far proved unsatisfactory. The return to civil conditions, of itself, frequently produces improvement in the general health and lessens the severity of the symptoms, especially if regular exercise be taken. Owing to the distress it produces, however, any form of exertion is generally avoided by the patient. For this reason, a course of graduated physical exercises under supervision in hospital is strongly advised. When this is refused, out-patient treatment along similar lines is attempted. In addition to taking long walks, the patient is encouraged to do a little gardening or wood-chopping, slowly increasing the amount daily, to live in the open air as far as possible and to keep regular hours. If the reason of such measures be explained and the patient be assured that, in spite of the distress it produces, exertion is not dangerous for him, he generally makes an honest attempt to follow instructions and considerable improvement in the general symptoms and increase in weight occur.

Drug treatment seems of little value. Neither stimulating nor sedative expectorants have been found to produce any definite improvement. In cases with profuse expectoration, a mixture containing potassium iodide 0.6 grm. and creosote 0.12 mil seems to afford some relief. General tonic treatment by iron, strychnine and phosphates is indicated, but it must be insisted that the hygienic measures and the taking of regular exercise are the important factors in treatment.

General Considerations.

The facts brought forward justify the conclusion that definite organic changes are present in the lungs in the majority of these cases. The most common

and persistent lesion is a peri-bronchial fibrosis with enlargement of the glands of the hilum and posterior mediastinum. Associated with this is a certain amount of patchy compensatory emphysema and, in a minority of cases, a chronic bronchitic condition. It is very difficult to obtain confirmation of these statements by post-mortem evidence, as instanced by the fact that in the only fatal case the patient died of intense septic pneumonia (following gangrenous appendicitis), so that the gas effects were very efficiently masked. That the physical signs are always more marked on the right side is of interest and I have not yet been able to find any adequate explanation of it. Although the X-ray examination generally shows diffuse changes throughout the lungs, they are often more marked on the right side.

The predominant symptoms are, in all probability, produced by interference with the respiratory exchange, owing to diminution of the elasticity of the lungs and alterations in the structure of the alveolar epithelium and the bronchial mucous membrane. In this way, the cough, dyspnoea and tachycardia may be accounted for. A recent paper by Haldane on "Anoxæmia" (3) affords a complete explanation of the mode of production of such symptoms, so that the mechanism will not be fully discussed here. Haldane also suggests treatment by prolonged administration of oxygen, but reference to his article will show the practical difficulty of such measures.

In addition to these symptoms of organic origin, there are, in many cases, symptoms which may be classed as neurasthenic. It is not always easy to draw a distinction between the two groups, but the latter may be said to include the "nervyness," tremor, sweating and occasionally the palpitation and tachycardia. As has been noticed, such symptoms often occur independent of "gassing," which sometimes acts merely as a starting-point for such a syndrome.

Although the conclusions here stated agree in the main with those of Achard, several points of difference must be noted. For example, such a statement as the following, with which the summary of his report opens, must be accepted with great reserve: "There is, happily, growing reason to think that only a small percentage of the surviving gas casualties of the war will suffer from any permanent disability." Again, one cannot subscribe to the dictum that "a large number of the sequelæ of all types of poison gassing are functional in character." Achard appears to have encountered bronchitic signs fairly frequently, but, in general, his findings as regards the lung lesions are in accord with those in this series. He also lays stress on the comparative infrequency of tuberculous complications. Such differences, while they may be mainly due to differing conditions of climate and temperament, serve to emphasize the fact that further investigation under Australian conditions is urgently required. Particularly does this refer to the necessity of obtaining post-mortem evidence as to the nature of the lung lesions. Moreover, since hot weather is said to intensify the symptoms, the effect of our summer conditions demands further enquiry. Unless such data are forthcoming, injustice may be done to these patients and increased incapacity may result from their being driven to unsuitable employment by inadequate financial assistance,

so that they will become a further encumbrance to an already heavily-burdened country.

In conclusion, I wish to express my thanks to Professor Sir Harry Allen for his ready help in elucidating the pathology of the condition; and to Colonel A. H. Sturdee, C.M.G., Principal Medical Officer, Third Military District, for permission to make use of the clinical material on which this paper is founded.

References.

- (1) Particularly the War Office "Memorandum on Gas Poisoning in Warfare," 1918.
- (2) *British Medical Journal*, May 10, 1919, p. 586.
- (3) *British Medical Journal*, July 19, 1919, p. 65.

PULMONARY FIBROSIS AFTER GASSING, AS SHOWN BY X-RAYS.

By Chas. E. Dennis, M.D.,

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Radiographer, No. 5 Australian General Hospital.

In my work as Radiographer at No. 1 Australian Auxiliary Hospital at Harefield I did little in the way of chest examinations, apart from those necessitated by war injuries, till after the severe 1916-1917 winter. In the spring of 1917 the number of chest cases sent for examination and diagnosis, or confirmation of diagnosis of pulmonary diseases, steadily increased. The first increase I attributed partly to the severity of the preceding winter and partly to the hardships of the winter in the trenches.

Many of the patients examined were suffering from early tuberculosis or recrudescences of old trouble. Quite a number, too, were men who had arrived in England into the rigors of that winter on Salisbury Plains after passing through the tropics. A number gave histories of previous chest trouble in pre-war time and some had been in sanatoria. Of course, this class of patient continued to come in till the end, but it is not of them that I wish to write.

Later on I noticed many cases being sent to me with the following symptoms and signs, *viz.*, cough, often dry, loss of weight, poor appetite with nausea and vomiting and general asthenia, tightness of the chest and pain under the sternum. The chest signs were indefinite and generally described as slight diminution of or harshness of the vesicular murmur and slight diminution of the percussion note. No tubercle bacilli were demonstrable in the sputum. Tachycardia was generally present also. In these cases I noticed, as a rule, on examination with the screen no gross lesion, the apices lighted up evenly, but the whole chest usually showed diminished translucency. The diaphragmatic movement was always greatly restricted on deep inspiration and often practically absent, except on coughing, which generally caused a free movement, proving this restriction to be functional. The hilus shadows were usually more evident than normal, often with patchiness due to glandular enlargement.

All these patients, on enquiry, gave a history of having been gassed, some badly, others slightly. At first the gas was chlorine cloud gas and later that of gas shells, phosgene and mustard gas, but it was not usually possible to determine which. I noticed in these cases a condition I did not at first recognize

as abnormal, it was so diffuse and faint, *viz.*, an increase in the fibrous tissue of the lungs, the cause of the diminished translucency, manifested by a thickening and increase in the lines radiating from the hilus through the lung. Suspecting this, I started to take radiographs of these chests to confirm my observations on the screen, for it is difficult to be sure of the picture on the screen, owing to the fineness of the fibrous network and also owing to the impossibility of setting a standard of translucency in chests of varying thickness and in men with varying muscular development. However, I found that the skiagrams (taken during suspended respiration) confirmed my observations. Often the right side was slightly more affected than the left, an observation noted by clinicians also. In cases of bronchitis not due to gas this condition was not present, except in long-standing cases, or in those who had been for a long time in dust-laden atmospheres, such as miners, etc..

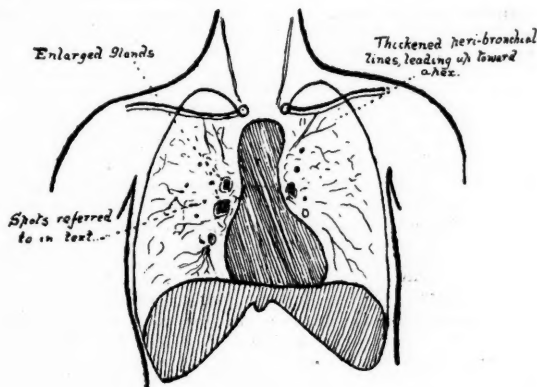
These "gassed" men were at first suspected of being in the early stages of tuberculosis, but as no tubercle bacilli could be found in the sputum, they were referred to the X-ray department to see if any focus of disease could be located. The symptoms and signs were very suspicious, but usually night sweats were absent and the tubercle bacilli could not be found in the sputum.

In the summer of 1918 Lieutenant-Colonel Yeatman, O.B.E., the Officer Commanding Harefield Hospital, drew my attention to an article in the "Epitome of Current Medical Literature" of the *British Medical Journal* by a German physician, describing similar X-ray findings in gassed German soldiers. Since my appointment as Radiographer at No. 5 Australian General Hospital I have seen a number of similar patients, who give a history of having been gassed. They show in a large number of cases restricted diaphragmatic movement, but not to the same degree as in the earlier cases; in fact, in one well-marked case of pulmonary fibrosis in a medical man, the diaphragmatic excursion was very good, but he told me he had been doing deep breathing exercises.

The picture in these later cases is similar to those seen at Harefield, *viz.*, diminished translucency of the chest, increase in the peri-bronchial fibrous tissue and increase in the hilus shadows, often with glandular enlargement. Lines are very constantly seen running up from the upper part of the hilus to the infra-clavicular region, especially on the left side, and at times almost to the apex and on the right side from the lower part of the hilus downwards and outwards towards the dome of the diaphragm, as well as from the centre of the hilus outwards (see diagram). In addition to these signs, there may be present as well signs of old lesions, such as calcareous glands or calcareous patches, but one frequently observes small, rounded or oval spots, the size of sweet pea seeds, scattered just outside the hilus. These are probably due to a cross-section of a fibrosed bronchiole or obliterated blood vessels. They are not dense enough to be calcareous and rather too defined to be active inflammatory (tuberculous) nodules. In some the radiating lines are broader and throw a more diffuse shadow than in others, and where secretion is profuse there may be a general cloudy mottling, but more general

and less localized than in tuberculosis. My opinion is that the gas-laden air causes either a destruction, or in milder cases a severe irritation, of the bronchial mucosa, with a subsequent increase in the fibrous element, producing a condition of fibrosis similar to that seen in the lungs of men employed in certain occupations, such as mining, but the more rapid production in "gassing" causes the more acute symptoms, as would be expected. The whole lung is involved, but why the right more than the left is difficult to say, unless it be due to the greater diameter of the right bronchus and the fact that it is more nearly a direct continuation of the trachea than the left.

The restricted movement of the diaphragm is possibly caused by the discomfort produced by deep respiration and hence it is more marked in the more acute earlier cases. This would also account for the diminished vesicular murmur and percussion note observed in these cases and the free movement on coughing. The changes are not always proportional to the severity of the gassing, and I have seen well-marked changes in those who have never had to report



sick at the time. In these cases the irritant was weaker, but the patient was longer in the gas-laden atmosphere, and again, owing to a matter of urgency, some were unable to report sick who otherwise would have done so. Some individuals, too, may be less prone to fibrotic changes than others.

I may state that at intervals I have checked my observations by examining more or less normal chests with screen and radiograph for comparison. In less severe cases it is always difficult to say where the abnormal begins and requires care and experience. However, in several cases at Harefield I diagnosed fibrosis and on enquiry found the patients had not been in France, but enquiry into their history showed that they had been miners. I also saw some who had been mining for some time and had cough, etc., but did not show appreciable fibrosis.

I mention these cases to show that I fought against the danger of imagining I saw what I expected—a very real danger in this class of work.

Much interest has been taken in this condition by physicians with whom I have been associated, and at Harefield I constantly had the opportunity of discussing the cases with their medical officers and ex-

amining the plates together with them, which also served as a welcome check on my observations.

The recognition of the fact that the condition is not a functional one, but accompanied by definite and permanent lung changes, is of very great importance, especially with regard to prognosis from a point of view of the Pensions Department, and with regard to the advisability of placing these men under the most favourable conditions with regard to climate and occupation.

Reports of Cases.

A CASE OF BILATERAL ADRENAL TUMOURS.

By G. H. Burnell, M.B., B.S.,

Acting Surgeon-Superintendent, Broken Hill and District Hospital.

This case is reported for two reasons; firstly, because bilateral tumours of the adrenals are somewhat rare; secondly, because clinically it resembled a case of intussusception and therefore has considerable interest from the point of view of differential diagnosis.

J.P., female, *æt.* 20 months, was admitted to hospital on November 5, 1918, with the following history.

She had been ill for one week with diarrhoea. On November 4, 1918, the diarrhoea suddenly stopped; since then the mother had noticed the child's abdomen swelling and neither flatus nor a motion had been passed, constipation being absolute. There had been no vomiting. The child had been fed frequently on laxogen since the onset of this illness; before that it was taking a mixed diet. She had had no previous illness.

On examination, the child was found to be well nourished; she was restless, but apparently in no pain. The temperature was normal, the pulse 120 in the minute and of good volume. The heart and lungs were normal.

The abdomen was very distended and tympanitic. No tumour could be felt and there was no superficial hyperalgesia. There was no tenderness to pressure.

Although the history was not absolutely typical of intussusception, the history of diarrhoea, followed by sudden constipation, rendered it likely that the excessive peristaltic movements of the diarrhoea had brought about the passage of a portion of bowel into its adjoining segment. Accordingly, on the day of admission a median sub-umbilical incision was made. The bowel, both small and large, was injected and very much distended, but no actual peritonitis was present. The stomach was not dilated. No intussusception or other cause of obstruction was apparent.

The gut appeared to have lost all its tone, as, when a rectal tube was passed, the flatus would not escape. However, saline solution was poured in through the rectal tube and with much difficulty a small amount of yellowish curd was "milked" out of the lower bowel.

The abdomen was filled with saline solution and closed. The child was kept on sips of water for 24 hours; it was then given whey, barley water and peptonized milk. The distension became gradually less until November 9, 1918, four days after the operation, when it suddenly increased and the patient died, with the respiration much embarrassed by the abdominal distension. Unfortunately, my notes do not show whether the bowels acted after operation.

At autopsy the thoracic organs showed no abnormality. There was a small amount of semi-purulent fluid free in the peritoneal cavity, with some flakes of lymph, but the picture was not that of an acute general peritonitis and could be explained by bacterial migration following the prolonged intestinal stasis. The liver was normal.

The left suprarenal contained a tumour about the size of a cherry. On section a semi-fluid substance escaped and left a soft, sponge-like, degenerate tissue, surrounded by a tough fibrous cortex. The left kidney was normal.

The right suprarenal was replaced by an ovoid tumour about 8 cm. by 4 cm.. No trace of normal suprarenal tissue could be found. The tumour was quite independent of the

kidney, which was easily stripped from it. A section showed a mottled surface, with many hemorrhagic areas, the whole being very soft and friable.

Sections of the tumours were shown to my friend, Dr. Bull, of the Adelaide Government laboratory, who reported: "The histological picture is that of lympho-sarcoma."

The explanation of the sequence of events is not an easy one and I shall be glad of any suggestions. At first I was inclined to think that the growth of the large tumour caused irritation of the sympathetic in the superior mesenteric plexus, thus causing inhibition of the bowel movements, while keeping the controlling sphincters closed.

But the superior mesenteric plexus only supplies the bowel as low as the transverse colon (Cunningham), whereas in this case the whole of the large bowel was atonic.

In this connexion Langdon Brown says:—

"Tonic spasm and atony are both due to sympathetic irritation, which may express itself in excess of normal movements—spasm due to constriction of sphincters—or in defect atony due to inhibition of normal movements."—*Lancet*, May 24, 1919.

Another possible explanation occurred to me in reading the "Practical Medicine Series" for 1918 (Vol. I, p. 400) in which Steiger quotes Helly, Biedle, Falta and others as reporting a hypersecretion of adrenalin in adrenal tumours.

Adrenalin, as is well known, like the sympathetic, inhibits visceral movements, while keeping the sphincters closed, and it may be that there was a hypersecretion of adrenalin in this case. This would explain why the whole of the gut, both small and large, was atonic. The macroscopic appearance of the tumours would lead one, however, to expect a deficient, rather than an excessive, secretion of adrenalin, but a deficiency of adrenalin hardly accords with the train of symptoms observed, according to our present teaching, nor was the course of the case that usually observed in Addison's disease.

Langlois demonstrated that ten-elevenths of the suprarenal bodies can be destroyed without the general body metabolism being so disorganized as to cause death, and it is probable that there was still more than one-eleventh of the normal adrenal tissue left in my case, so that death would not be due to hypoadrenia.

Osler says: "There is a special type of malignant growth (of the adrenal) characterized by rapid growth, diffuse infiltration of the liver and great distension of the abdomen, without ascites and jaundice," but he does not enter into any discussion as to the causation of the distension.

Kettle, in "The Pathology of Tumours," discussing the adrenals, says: "Sarcomata may grow from the medulla or cortex. They occur chiefly in children and are usually of the round-celled or lympho-sarcomatous variety."

Bland-Sutton says (p. 575) that adrenal tumours in children are rare; that they occur early, that they are usually bilateral, that they usually give rise to secondary deposits and usually cause skin pigmentation and precocious development of sexual organs.

In the *Lancet* of August 24, 1918, Rashbrook and Carter report a case of hypo-adrenia simulating intestinal obstruction. This was the case of a soldier, *et. 19*, who was subject to periodical attacks of pains and vomiting, accompanied by constipation. Pain usually was in the epigastric region, but occasionally radiated into right iliac fossa.

In one of these attacks the patient died and at autopsy the stomach was found somewhat dilated and both adrenals were seen to be the seat of caseous degeneration, around which giant-cell systems were seen microscopically. They do not state the condition of the small bowel. There was no skin pigmentation in this case nor in mine. As no mention was made of the small bowel, presumably it was not distended and, this being so, it is easy to reconcile the autopsy findings with a hypo-adrenia, but in my case the findings cannot be so explained.

These authors quote Eblstein and Zandy as having recorded the occurrence of cases of suprarenal disease, with predominant abdominal symptoms; but I am unable to find any reference to this account.

AMYOTONIA CONGENITA.¹

By E. W. Fairfax, M.B. (Syd.),

Honorary Physician, Royal Prince Alfred Hospital.

W.B., *et. 9* years, was brought to the Royal Prince Alfred Hospital by his mother because the child could not walk properly and because he has snored at night for the last seven months. The family history is good. The child had pertussis at the age of two years and morbilli when five years of age.

The mother says that he was more backward than her other children. He did not speak until he was two years of age and then his speech was indistinct. He did not walk until he was 2½ years old. At the age of three his gait was "staggery." He was taken to the Children's Hospital, where he was admitted. After treatment he was considerably better, but he soon relapsed into his former condition. He has improved and relapsed several times since.

About seven months ago, his mother noticed that he had stridulous breathing and that he snored loudly at night. The child has a dull expression, with intelligence below the average. His memory is not defective.

The breathing is stridulous. The respiratory rate is 20 in the minute. There are scattered rhonchi over both lungs.

Articulation is indistinct on account of the stridulous breathing.

The boy cannot sit upright. The shoulders fall forward and the back is bent. There is no lateral curvature, nor any tenderness or any other abnormality, except that due to muscular weakness. The muscles of the back are not obviously wasted, but there is a want of tone in the muscles. The trunk can be flexed so that the feet can be placed behind the neck without any apparent discomfort.

The first to the sixth cranial nerves are apparently intact. There is complete seventh nerve paralysis, lower motor neurone type. This developed one month after admission. The upper part of the face has now completely recovered (three months after admission), but there is still some weakness of the muscles at the angle of the mouth. The eighth and ninth cranial nerves are normal; there is a bilateral abductor laryngeal paralysis. The eleventh and twelfth nerves are normal.

There is loss of tone and weakness of the extensors of the toes, the anterior tibials and the peroneal muscles and to a less extent of the extensors and flexors of the knees. The left calf measures 0.8 cm. less in circumference than the right. There is general muscular weakness and loss of tone in the upper limbs, more particularly in the forearms and hands. There is no obvious wasting of any particular muscles, but the limbs are badly developed for a boy of his age and state of general nutrition. The gait is unsteady; the feet are lifted high. The loss of tone of the muscles of the limbs and back is particularly noticeable. This loss allows the limbs and trunk to be placed in various abnormal positions of over-flexion and over-extension. Massage and general training have been carried out for about three months and this has led to a great improvement. He can now run moderately well, can get up from the prone position without assistance and can use his hands much better. Dr. L. G. Teece informs me that there is a normal faradic response in all the muscles. There is no definite ataxia.

No abnormality of the sensory system has been detected.

The triceps and supinator jerks are absent on both sides.

The knee jerks and the tendo-Achillis jerks are also absent. The plantar response is flexor. No abnormal response is noted in connexion with the organic reflexes.

The case appears to be one of *amyotonia congenita*. The age of onset, the distribution of the involved muscles, the loss of tone and the absence of uneven wasting, as well as the improvement which has occurred from time to time, are suggestive of this disease.

In a muscular dystrophy of such long standing, definite atrophy and weakness would be present. It is impossible to obtain from the mother any information as to the rapidity

¹ Read at a Meeting of the New South Wales Branch of the British Medical Association on August 8, 1919.

of onset of the abductor laryngeal paralysis; the onset of the facial paralysis was sudden and took place while the patient was in hospital.

A CASE OF RAYNAUD'S DISEASE.¹

By E. W. Fairfax, M.B. (Sydney),
Honorary Physician, Royal Prince Alfred Hospital.

The following case is of interest, particularly on account of the entire absence of any ascertainable defect on which the symmetrical gangrenous condition has been grafted.

B., a single female, aged 18 years, was admitted to the Royal Prince Alfred Hospital, complaining of "sore toes." The affection is said to have been present for twelve months. The family history is good.

The patient was born in New South Wales and has lived in this State all her life. When a child she had an attack of pneumonia and two years ago she had measles. Otherwise her health has been good. The catamenia has been normal.

About twelve months ago she had a chilblain on the great toe of the right foot. The chilblain ulcerated. At the same time she had a sharp pain radiating up to the right ankle-joint. A few months later the toe-nail was removed and the toe suppurated. The discharge was very foul. Nine months ago the distal phalanx of the toe was amputated. The wound has not yet healed. Three months ago the nail of the second toe of the left foot came off. She has noticed that her toes have been of a blue colour for some years. She says that they have become worse in the winter months. At times she experiences shooting pains in her toes and sometimes a tingling sensation. She complains now of pain in the second toe of the left foot and in the great toe of the right foot.

The patient is a well nourished girl, of average intelligence. The great and second toes of the left foot are of a dark purple colour. There is no definite line of demarcation, the purple colour gradually merging into a red colour. The red area fades smoothly into normal skin. The nail of the second toe has been removed. A large, dark sore is present on the stump. The great and second toes of the right foot are affected, but not to the same extent as the toes on the left foot. The distal phalanx of the great toe has been amputated; a discharging wound remains. The dark area extends for a short distance on to the median aspect of both feet.

Both hands are continuously of a purple colour. The change is most evident at the finger tips and extends for about 7 to 8 cm. up the forearms. Her face is flushed and the venules are visibly dilated.

The blood pressure measured in the brachial artery is 140 mm. of mercury systolic and 100 mm. diastolic. Measured in the popliteal artery it is 138 mm. systolic.

The patient has been given potassium iodide and ionization with 0.5% solution of potassium iodide has been applied. An attempt has been made to use sodium chloride for ionization, but this was found to cause more pain than the patient could comfortably stand.

The toes are now much cleaner; there is less discharge and the pain is less constant. The decrease in the pain is probably due to the warmer weather. The blood pressure has not altered appreciably.

CHRONIC ULCERS OF THE STOMACH AND DUODENUM.¹

By John Morton, M.B., Ch.M. (Sydney),
Honorary Surgeon, Royal Prince Alfred Hospital.

The following is an account of two cases of chronic ulcers, one gastric and the other duodenal, which proved to be of a simple nature. In both instances a malignant condition might reasonably have been suspected.

The first patient was a man of 65 years, in whom symptoms had existed for three years. They consisted in pain,

vomiting and loss of weight. He had lost about 26.75 kilograms. During the last twelve months he had vomiting practically everything. Shortly before admission he vomited about two and a quarter litres of brownish, tarry material. At the first operation a mass was found in the pylorus of the size of a hen's egg; the stomach was greatly dilated and hypertrophied. A couple of enlarged glands were present near the lesser curvature. The mass suggested a carcinoma and a preliminary gastro-enterostomy was therefore carried out. This was followed by great relief and rapid improvement in the patient's condition.

After four weeks an incision was made to remove the growth. When the pylorus was exposed, it was found that the mass had almost disappeared. Thinking it advisable to remove what remained along with the pylorus, I did so. On examining the specimen afterwards I was still more surprised to find the mucous membrane free from ulceration. Apparently the mass had almost disappeared and a long-standing ulcer had healed in the short space of four weeks after the gastro-enterostomy.

This patient also had a gall stone and a congenital absence of the left lobe of the liver. The left lobe of the liver was represented by a few button-like pieces of liver substance.

The second patient was a man, aged 56 years. He had been subject to frequent bilious attacks for the last thirty years. Five weeks ago he was attacked suddenly with pain in the epigastric and right hypochondriac regions, with retching for a couple of days. A week later he had the same severe pain, with faintness, sweating and vomiting of bile. The day before admission he had severe hæmatemesis and afterwards he passed a good deal of blood by the bowel.

He has lost about six and a third kilograms in weight during the last few weeks. The bowels are constipated. A week after admission the abdomen was opened. A small, hard mass could be felt in the duodenum, near the pylorus, apparently a simple inflammatory thickening over an ulcer. A posterior gastro-enterostomy was carried out and the pylorus closed with a ligature of stout silk.

The patient passed blood *per rectum* after the operation, but has gradually recovered and has done very well.

My experience is that the result of gastro-enterostomy for duodenal ulcer is more satisfactory when the pylorus is occluded in this way.

Reviews.

OPHTHALMOLOGY.

"Aids to Ophthalmology," by N. Bishop Harman,¹ appears in its sixth edition, with several new illustrations and enlargements of the chapters on subjects such as glaucoma, muscular defects and therapeutics.

The reader is struck throughout by the author's originality of style and his lucid descriptions and is left with a feeling of regret that he has not launched into a complete textbook instead of attempting to conform to the limitations demanded by the "Aids Series."

It is impossible to do justice to the treatment of a condition such as glaucoma in the limited space at the author's disposal and it would be wiser to have referred readers to larger works if they desire to investigate the various methods of treatment and the views of the schools which support such methods. Whereas iridectomy in acute glaucoma may be supported by the majority of ophthalmologists, it is by no means the case that it is discarded in chronic glaucoma, nor is it generally agreed that the results of operations aiming at a filtration cicatrix "are all that could be desired."

Refraction is discussed very fully and the author becomes somewhat dogmatic. In one or two instances he contradicts himself apparently. He gives a table showing the average accommodation of the normal eye at various ages, the amount at 40 years being 5 D. A few pages further on he dispenses with a cycloplegic after 40 years, "because the accommodation is negligible."

The chapter on operations is good. The author's feeling operation for squint is well described.

¹ Read at a Meeting of the New South Wales Branch of the British Medical Association on August 8, 1919.

¹ Aids to Ophthalmology, by N. Bishop Harman, M.A., M.B., F.R.C.S., Sixth Edition, 1919. London: Baillière, Tindall & Cox; Folscop Soc., pp. 226, with 112 figures in the text. Price, 3s. 6d. net.

The book is freely illustrated and many ingenious devices of the author, which have been described from time to time by him in other places, are gathered together. The type is very good and the reproduction excellent. A series of examination questions and a very full index are attached.

It is to be hoped that the author may, as suggested above, see his way to produce a complete text-book on the subject before long, as his style is admirably adapted to presenting a highly technical subject in an interesting and agreeable form.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A meeting of the Senate of the University of Sydney was held on October 13, 1919, at University Chambers, Phillip Street, Sydney.

The following degrees were conferred *in absentia*:—

Bachelor of Arts: F. D. Montgomerie.

Bachelor of Medicine: W. L. Brookes, T. W. Freeman, J. F. B. Langdon, J. B. McElhone, K. R. McGregor, E. J. McGuinness, Brenda A. Mitchell, G. A. Murray, E. B. Reed, Enid Robertson, W. C. T. Upton.

Master of Surgery: J. B. McElhone, E. J. McGuinness, E. B. Reed, W. C. T. Upton.

Bachelor of Dental Surgery: J. J. Clark.

The request of the Advisory Council of Science and Industry, asking for the assistance of Messrs. L. Harrison (Lecturer in Zoology) and E. E. Turner (Lecturer in Organic Chemistry) in the investigation of white ant pest was granted.

The Perpetual Trustee Company, as executors of the will of the late J. F. Archibald, advised a bequest of four-fiftieths of the net value of the estate for any fund established for cancer research. It was resolved that a letter of grateful appreciation be sent and the matter was referred to the Faculty of Medicine for consideration and report.

Professor MacCallum reported a donation of Delphin Classics (170 volumes) from Miss Scott, Glasgow. It was resolved that the gift be accepted with thanks and a letter sent to Miss Scott, expressing the Senate's appreciation.

A letter was received from the Under-Secretary for Public Instruction, asking the Senate to nominate delegates to attend the conference in regard to agricultural education and research. Professors Watt, J. Douglas Stewart and Mr. H. C. L. Anderson were appointed.

The following were appointed for a period of three years to lectureships falling vacant on December 31, 1919:—

(a) Commercial and Industrial Law: F. A. A. Russell, M.A.

(b) Obstetrics: Fourness Barrington, M.B., Ch.M.

(c) Mechanical Dentistry: E. F. Deck, D.D.S.

(d) Surveying: A. D. Craig, B.E.

The following appointments were made:—

(a) Lecturer and Demonstrator in Physiology: H. S. Halcro Wardlaw, D.Sc.

(b) Lecturer in Mathematics: H. H. Thorne, B.Sc. (Syd.), B.A. (Cantab.).

(c) Lecturer and Demonstrator in Electrical Engineering: L. Hey Sharp, B.Sc., B.E.

(d) Lecturer and Demonstrator in Geology: L. L. Waterhouse, B.E.

(e) Lecturer and Demonstrator in Chemistry: G. J. Burrows, B.Sc.

(f) Demonstrator in Geology: Miss Dorothy K. Powell, B.Sc., for the balance of the academic year.

On the recommendation of the Library Executive Committee, it was resolved that in Rule 13 (Calendar, page 119), the word "July" be substituted for the word "November."

On the recommendation of the Faculty of Science, a modified curriculum in chemical engineering, leading to the degree of Bachelor of Engineering in Chemical Engineering, was adopted.

THE UNIVERSITY OF TASMANIA.

The following gentlemen have been elected members of the Senate of the University of Tasmania for the term of three years ending December 31, 1922:—

Leonard Harford Lindon, Esq., M.A.

Frederick Lodge, Esq., B.A.

William Henry Williams, Esq., M.A.

Dr. James Sprent has resigned his seat on the Senate of the University and Mr. Lyndhurst Falkner Giblin has been appointed in his stead for the remainder of the term of three years ending December 31, 1920.

Naval and Military.

APPOINTMENTS.

The following notices have been published in the *Commonwealth of Australia Gazette*, No. 122, of October 23, 1919:

Australian Imperial Force.

APPOINTMENTS TERMINATED.

First Military District.

Captain C. J. Weedon, 29th August, 1919.

Second Military District.

Major W. R. Clay, 29th September, 1919.

Major H. L. Tooth, 29th September, 1919.

Captain W. R. Page, 14th September, 1919.

Captain J. A. D. Barton, 23rd September, 1919.

Captain C. S. Molesworth, 6th October, 1919.

Captain G. W. Parramore, 24th August, 1919.

Captain B. A. Veech, 26th August, 1919.

Third Military District.

Major C. N. Finn, O.B.E., 7th September, 1919.

Major W. H. Rennick, 10th October, 1919.

Major F. L. Bignell, D.S.O., 28th September, 1919.

Captain A. A. Lang, 24th September, 1919.

Captain C. C. Marshall, 17th September, 1919.

Fourth Military District.

Captain S. E. Holder, 30th September, 1919.

Captain E. L. Symons, 24th September, 1919.

Fifth Military District.

Captain A. E. Morton, 20th September, 1919.

Captain B. G. Quinlan, 9th September, 1919.

An amendment is published concerning the grant of honorary rank to Captain L. W. Bond, D.S.O., in the Australian Military Forces. In the notice published in the *Commonwealth of Australia Gazette*, No. 107, and reproduced in *The Medical Journal of Australia* of September 13, 1919, page 229, this officer was granted the rank of Honorary Major. It is now announced his rank should be Honorary Lieutenant-Colonel.

PNEUMONIC INFLUENZA.

The restrictions imposed on the public on account of the epidemic of influenza have been removed by the order of the Commissioner of Public Health of Queensland, in regard to the Shire of Fitzroy and the townships of Tannymorel and Mount Colliery.

The fate of the *Institute of Science and Industry Bill*, which has been before the Federal Parliament for some time and which has been subjected to political criticism by many members of the House of Representatives, is causing those who recognize the significance of a scientific basis of our industries, much concern. The Minister for Trade and Customs maintained on October 22, 1919, that the Government had not abandoned the Bill; it had merely postponed it.

The South Australian Parliament is at present considering two measures of direct interest to the medical profession. The first is the *Medical Practitioners Bill* and the second is the *Opticians Bill*. From the debates which have taken place during the second readings in the Legislative Council, it is obvious that some of the Honourable Members need to be informed in regard to medical matters. The Honourable J. Jelley is labouring under the delusion that spectacles are employed "to restore the vision." No one speaking in the debate seems to have been aware that this conception is absolutely opposed to fact.

The Medical Journal of Australia.

SATURDAY, NOVEMBER 1, 1919.

The Repatriation of Medical Officers.

The future of the loyal members of the medical profession who went to their country's aid in the time of need, is a matter of grave concern to the whole community. It is incumbent on us to indicate to the public the necessity of probing this matter to the bottom. The burden of heavy war debts is quoted when the application for adequate measures to re-establish or re-equip the men who have suffered in their earning capacity by war service, is demanded. Another reply to our proposals is that differential treatment cannot be given to a special class of citizen. Neither of these rejoinders is valid or tenable. Necessary expenditure connected with repatriation must be met and can be met. Australia, like the rest of the world to-day, has to recognize the need for economy. Extravagant expenditures undertaken for scarcely veiled political objectives are only too common in every State. Large economies can be effected by relinquishing or postponing enterprising schemes of a commercial nature by governments and by reducing the stupendous waste in the publication of departmental activities, more especially when the exercise of a small amount of ingenuity would enable the individual records to be grouped and abbreviated. Thousands of pounds could be saved without the sacrifice of anything of importance in this way. A country panting to discharge its debt to those who risked life, limb and sustenance, a country faced with the necessity of a rapid development of all its industrial and scientific resources to wipe out the paralysing effects of a ruinous war, is not justified in squandering money on relatively unimportant undertakings. Economy demands a concentration of effort on the improvement of the health of the people, on the raising of the efficiency of the individual and on the preservation of established law and order.

The second enjoiner is devoid of a rational basis. In the most democratic scheme yet devised, equality is claimed only in regard to opportunity and plebiscite government. Our educational institutions are open alike to the sons of the rich and of the poor. The learned professions demand a special equipment and no sociologist could dream of asking the legislature to admit to them men of all sorts and conditions, irrespective of their qualifications. In every civilized country it is held that a standard of knowledge shall be defined for those entrusted with the care of the bodily and mental welfare of the people. This knowledge cannot be obtained without expenditure of money. It is a wholly unreasonable proposition to allow ill-informed men and women to undertake the treatment of disease. If this be admitted, the Department of Repatriation or the Department of Defence is acting unreasonably in refusing to provide facilities for the re-education of medical men who are in need of it after prolonged war service. Some of the men who enlisted for service in the Australian Army Medical Corps walked out of the medical schools into the field of battle. For several years they were required to focus their attention on a peculiar and highly specialized form of activity. They forgot much that they had learned at the medical schools. Instead of extending their knowledge and experience in regard to the common and infrequent ills to which human beings are heir, they found themselves removed from the possibility of learning the things that are so essential for their future utility as medical practitioners. They return less well equipped for their life's undertaking than they were when they embarked on the splendid enterprise. In the interests of these men and of their future patients, the country is required to pay for the necessary re-education to make good the lost time and opportunity of the years spent at the war. This may entail special and differential treatment of a class, but the differentiation is just as urgently needed for the public weal as for the personal advantage of the men concerned. We hear from time to time the statement that the men returning do not ask for post-graduate training or for employment of resident medical officers at the large teaching hospitals. It would be surprising if they did, for their one aim is to establish themselves

in practice as rapidly as possible. The men, however, are not blind to the real need for this training. In Melbourne the first course held at the Melbourne Hospital was used by some fifty returned men. The second course has been even more successful. Under the auspices of the Victorian Branch of the British Medical Association an ambitious programme has been devised and facilities have been created at all the metropolitan hospitals for the excellent object in view. There were seventy returned medical officers who availed themselves of the opportunities offered. These figures demonstrate that, notwithstanding the apparent absence of demand, the energies of those who provide what these men need, will not be wasted.

We have asked the authority, be it the Department of Repatriation or the Department of Defence, to render it possible for post-graduate training to be carried out efficiently. The men should be granted leave on full pay for six months for the purpose of pursuing post-graduate study, or they should be assisted in an adequate manner to meet the cost of undergoing this re-education before they engage in practice. The Repatriation Department should further be prepared to advance returned medical officers substantial sums of money to purchase practices. If the sums lent should be larger than the sums placed at the disposal of a combatant to acquire a small business or to settle on the land, it should be recognized that the departmental £250 would be useless to a medical man. Moreover, it may be claimed that the duties performed by medical men in the navy or in the army during the war were special and peculiar and fully justify a differential treatment at this stage. We have not referred to the promises given in Great Britain in this connexion. It is stated that these promises were given without due authority. But even without any promises, the claim is a just one and should engage the attention of those in whose power it lies to grant them.

WOMEN DOCTORS.

Years ago the pioneers in the women's movement fought against terrible odds to secure an entrance into the medical profession. Prejudice, conceit on the part of men, an ill-concealed fear to meet women

in competition and to be compelled to grant some of them leading places, an irrational conservatism and the curious fetish of an alleged superiority of the male sex served as barriers to be overcome. Elizabeth Garrett Anderson and her small flock of patient and earnest co-workers climbed over each obstruction which barred the way. It is long since that the universities opened their doors to women students and admitted women candidates to the examinations for medical degrees. In the old country the Royal Colleges maintained their untenable objection until they became the laughing stocks of the whole world. The famous triangle in London provided women with facilities for the satisfactory study of medicine. The Royal Free Hospital, the Women's Hospital in Euston Road and the London School of Medicine for Women, the three apices of the triangle, became the centres of medical education for women. It was unavoidable that there should be separate institutions, for the unbending attitude of the men who guided the policy of the other medical educational establishments, removed the possibility of equal opportunities for and friendly competition between men and women. The progress in London was very gradual. As early as 1865 the Society of Apothecaries opened its doors to women. In 1909 the Royal College of Physicians granted women the privilege of becoming licentiates and members, as well as diplomates in public health, but this august corporation determined that no woman could become eligible for the fellowship, nor take part in the government, management or proceedings of the college. In the same year the Royal College of Surgeons of England adopted a similar attitude.

After the essential difficulty had been overcome and women had gained the right to enter the profession of medicine on equal terms with men, it was necessary to take the next step. This consisted in securing the same privileges in the practice of medicine as were enjoyed by men. Women were compelled at first to accept positions at a lower rate of remuneration than men; it was that or nothing. The British Medical Association many years ago decided that there should be no differentiation. Nevertheless, women practitioners found it essential to form societies of their own to protect their rights. There remained still a differential treatment which men

were not willing to sweep away once and for all. Certain positions were not open to women candidates. It took years before women found it relatively easy to find posts in hospitals, in laboratories and in the public services. On the continent of Europe the same silent conspiracy of exclusion existed. A Russian lady of extraordinary ability established herself as a bacteriologist in Berlin and was recognized as one of the authorities of the day. For years Lydia Rabinowitsch worked as plain assistant in Orth's laboratory. A man having achieved half as much as she had, would have gained a professorship at a relatively early stage. In the end the university authorities found that they could resist no longer and Lydia Rabinowitsch was created a professor in the medical school. Elsewhere similar difficulties had to be overcome, until the position was at length reached when women were ostensibly competing with men on equal terms in the medical profession. The manner in which medical women have performed what in the olden days would have been regarded as men's work during the war, has demonstrated the utter absurdity of a differentiation. And yet it exists to-day. There is something quite irrational in the existence of separate medical societies for women practitioners. Women who choose the medical profession as a calling, are or should be prepared to undertake the same work and to attack the same problems as male practitioners undertake and attack. There should be free and open competition and no reserve at all. Every post from the junior assistantcy at a small hospital to the position of warden of the medical school should be open to both sexes alike. The choice should fall on the most capable individual.

At the present day the fallacious prejudice still exists in many parts of the Commonwealth. There are positions which are closed to women practitioners, ostensibly on the ground that the work cannot be conveniently or adequately performed by women. Men hazard the opinion that women lack the tact necessary to handle certain sections of the community, that they are unfitted to carry out novel methods of administration or control in the face of opposition on the part of local health authorities. The chief administrative positions in many governmental departments are apparently closed to women, even when

it can be shown that on the score of ability, enthusiasm and ingenuity the woman candidate is superior to the male candidate. There is still lurking in our midst a sort of benevolent patronage extended to women by men, which is continued as long as the patronized woman does not enter into actual competition with her male colleague.

The time has arrived when this mediæval prejudice should disappear. The medical profession exists for the benefit of the community. If women are competent to perform the tasks that belong peculiarly to the medical profession, the fullest opportunity should be given to them. The sex bar must be elided from the medical world. Women have demonstrated that they can compete on equal terms in every branch of the medical profession with men.

THE PHYSIOLOGY OF CYANOSIS.

During the course of the influenza epidemic special attention was paid to the strange violet, heliotrope or blue colour of the skin of many of the patients. Clinicians wrote of the symptom as if it were pathognomonic of epidemic influenza and startling coloured pictures were published to support this view. Various theories and opinions concerning the significance of the colouration have been brought forward and we have dealt with some of these views as critically as the available information would allow. Some observers denied that the sign represented a true cyanosis and suggested that it was a skin lesion, akin to an erythema. Others sought to refer the colour to the presence of methemoglobin. The views were to a large extent based on clinical observations with little or no chemical foundation. The subject has recently been studied on scientific lines by Dr. William C. Stadie, of the Rockefeller Institute for Medical Research, and by Dr. Christen Lundsgaard, of the University of Copenhagen. Both of these workers have arrived at the conclusion that our conceptions of cyanosis in general are not based on exact data. They have therefore endeavoured to ascertain the physico-chemical condition of the blood in persons manifesting the symptom of cyanosis. Dr. Stadie has measured the oxygen content of arterial and of venous blood in pneumonia and especially in post-influenzal pneumonia.¹ Hürter showed a few years ago that the radial artery could be punctured for the purpose of withdrawing a small quantity of blood without risk to the patient. This method has been used in a relatively large number of persons and it has been found that, given proper technique, no ill effects result. Dr. Stadie has collected blood from the arteries and from the veins of 33 patients suffering from pneumonia and of five normal subjects. The blood samples were examined for the purpose of determining the oxygen content, the oxygen capacity

¹ *The Journal of Experimental Medicine*, Vol. XXX., No. 3, September 1, 1919.

and the oxygen unsaturation. The oxygen content of the arterial blood of normal persons was found to amount to about 20 c.cm. per 100 c.cm. of blood. The range is small and the figure corresponds closely to the oxygen capacity of the blood. The average reading of the oxygen capacity was 21.2 c.cm. per 100 c.cm. of blood. This means that arterial blood carries an amount of oxygen that is about 5% below the maximum amount the same blood can hold. The venous blood in normal persons contains about 15.6 c.cm. of oxygen per 100 c.cm. of blood. The variation in the determinations was larger in the case of the venous than in the case of the arterial blood. This means that, while the oxygen unsaturation of arterial blood represents about 5%, that of venous blood stands at 26.8%. The arterial blood of persons suffering from pneumonia revealed an oxygen unsaturation of a different order. The variation was very wide. In those cases in which no cyanosis was present, it varied approximately within the same limits as under normal conditions. Similarly the oxygen unsaturation of the venous blood was found to be only slightly higher in pneumonia without cyanosis than in health. But when cyanosis was present, the oxygen unsaturation of both arterial and venous blood was greatly raised. The average was 24.7% and 44.5% respectively. Moreover there proved to be a definite relationship between the degree of cyanosis and oxygen unsaturation of both arterial and venous blood. The violet and heliotrope tints were seen to indicate a definite diminution in the amount of oxygen that the arterial blood carried. In no instance was an unusually low total oxygen carrying capacity observed, even when the cyanosis was extreme and a fatal issue pending. This observation practically excludes the existence of methæmoglobinæmia.

Dr. Lundsgaard arrived at a somewhat similar conclusion.² He did not feel justified in collecting samples of arterial blood, but aimed at the determination of the carbon dioxide content of the venous blood, the oxygen unsaturation of the venous blood and the decreased oxygen content of the venous blood. His object was to ascertain the primary cause of cyanosis. His observations and analyses prove conclusively that there is no relationship between the amount of carbon dioxide in the venous blood and cyanosis. On the other hand, his figures demonstrate in a striking manner the coincidence between oxygen unsaturation of the blood and cyanosis. He finds reason to hold that cyanosis depends on the increased amount of reduced hæmoglobin in the blood in the capillaries. He estimates the oxygen unsaturation of capillary blood as lying midway between that of arterial and that of venous blood. Normally the figure is given as 2 to 3 volumes per cent. When the figure is raised to about 7 volumes per cent., cyanosis appears. This holds good in cases of cardiac disease or pulmonary disease or artificial stasis in a limb. The larger amount of reduced hæmoglobin may be produced by loss of oxygen during exercise or by loss of oxygen as a result of retarded circulation. It may also arise when the arterial blood does not become fully saturated. This takes place in certain diseases of the heart and in

pulmonary affections, either because of the altered conditions of circulation or because of the diminished tension of oxygen in the alveoli. Dr. Lundsgaard's figures differ from those of Dr. Stadie because, while the latter has measured the oxygen unsaturation of the arterial blood, the former has assumed that it is nil in normal individuals. Closely connected with this determination of a relationship between oxygen unsaturation and cyanosis is the ascertained fact that cyanosis cannot be produced in a person whose hæmoglobin has been reduced below 35%. This means that when the blood has an oxygen carrying capacity of 6.5 volumes per cent. or less, the amount of reduced hæmoglobin during life cannot suffice to give rise to the physical appearance of cyanosis.

ŒDEMA OF THE LUNGS.

It is usually taught that water-logging of the lungs is the immediate cause of death in many pulmonary conditions, in drowning and in some general diseases. After death the lungs are found to contain a varying amount of exuded fluid. The condition of the heart in these persons is one of failure of the left ventricle. It is supposed that the ventricle can no longer empty itself as a result of raised arterial blood pressure. In death from drowning there is an obstruction to the entrance of air into the alveoli, due to the presence of water in the oral cavity and fauces. The œdema of the lungs is said to be a secondary effect of the disturbed pulmonary circulation, resulting from the interrupted ventilation of the lungs. The expression, "drowned in his own fluids," is frequently applied to the assumed cause of death associated with pulmonary œdema. In the course of an extensive investigation into the toxicology and pathology of war gases, Dr. M. C. Winternitz and Dr. R. A. Lambert have noted that there is no evidence in favour of the view that death is caused by an exudation of fluid into the air spaces.¹ In the first place, they found that while nearly all the war gases induced œdema of the lungs, the degree of the œdema was usually less in fatal than in non-lethal poisoning. Moreover, they were able to show that animals recovering from phosgene poisoning, who did not exhibit any serious symptoms of pulmonary embarrassment, often had considerable œdema of their lungs. This was demonstrated after the animals were killed. Animals that were highly susceptible to the effects of the gas, frequently had less œdema of the lungs than the more resistant species. It has been shown that poisoning with phosgene, chlorine or chloropierin gives rise to an increase in the concentration of the blood. The increase varies according to the gas employed and the animal subjected to the vapour. This increase in the viscosity of the blood has been noted in soldiers exposed to war gases. It has been assumed that this increase in the concentration of the blood is caused by an escape of the serum into the parenchyma of the lungs. The authors have endeavoured to ascertain whether the blood changes could be used as an index of the degree or extent of the pulmonary œdema. A series of experiments, however, proved conclusively that there is

² *Ibid.*

¹ *The Journal of Experimental Medicine*, Vol. XXIX., No. 6, June, 1919.

no parallelism between the amount of fluid held in the lungs and the loss of fluid from the blood. Finally, they flooded the lungs of animals with six litres of isotonic salt solution through the bronchi without producing any evident changes in the well-being of the animals. The lungs of these animals, who had been subjected to the process of irrigation for at least two hours, were subsequently examined under the microscope. No histological lesions were discovered. These experiments were conducted in such a manner that the penetration of the fluid into the alveoli was proved. The solution was tinted by means of dyes and the coloured solution was found in the air cells.

BLOOD CHANGES IN MAN.

Few measurements can be made directly upon the human circulatory mechanism. Hence it becomes necessary to make calculations in respect to many features of the flow of blood. The volume propelled from the heart during each minute and the total quantity of the blood in the body can only be calculated from the available data by the use of formulæ. These formulæ are often empirical, though they may have some rational basis. It has recently been suggested that rapid changes in the total volume of the blood may be readily estimated by measurements of the percentage of hæmoglobin in the capillary blood. The hæmoglobin is enclosed within the corpuscles which do not migrate from the blood vessels when the quantity of blood is increased or lessened by the passage of liquid into or from the lymph spaces around the capillaries. Consequently, every alteration in the amount of fluid contained in the blood vessels influences the concentration of corpuscles, *i.e.*, of hæmoglobin in the blood. As the total quantity of blood is augmented, the percentage of hæmoglobin in the blood is lessened. When the amount of the blood is lessened, the percentage of hæmoglobin in the blood is increased. It has been shown that this method of determining the volume of the blood is satisfactory, provided that an allowance is made for the lag due to a slow speed of circulation and for partial stasis.

An interesting series of observations¹ upon changes in the blood pressure and blood volume during the course of operations upon men have been made by Captain H. C. Bazett, R.A.M.C., who has had the benefit of the advice of Professor Dreyer and W. M. Bayliss. In all, 107 sets of measurements were made upon 12 subjects. The systolic and diastolic blood pressures were measured before, during and after the operation by means of a Riva Rocci apparatus and by the use of the auscultatory method of Oliver for determining the two levels. The capillary blood pressure was determined in the usual manner. The hæmoglobin was estimated by comparing the several samples from the same patient by means of a Du Borse colourimeter, the actual value of one sample being obtained by Haldane's method. It has been assumed that the volume of the blood varies inversely as the percentage of hæmoglobin. During operations and for some hours afterwards this assumption will only be relatively true as some loss of hæmoglobin will occur in the operation. The amount of

blood lost in this way can be estimated by noting the loss of hæmoglobin at the end of the first 24 hours after the operation. The accuracy of this hypothesis has been ascertained in a patient with a fractured skull. During the decompression all the blood was washed into a bucket with salt solution. The liquid was collected after the surgical operation and the amount of hæmoglobin determined with the colourimeter. In this way it was calculated that the patient lost 782 c.cm. blood. By determining the change in the percentage of hæmoglobin during 24 hours it was calculated that the patient lost 760 c.cm. of blood. The agreement between the two results is sufficiently close to show that the methods are moderately accurate. The results which have been obtained from the series show that the pulse rate, systolic and pulse pressures are raised during the early stages of an operation, while the diastolic pressure is usually slightly raised and the percentage of hæmoglobin reduced. In other words, the volume of the blood is diminished. At a later stage in the operation the blood pressures all fall; the pulse rate may remain accelerated. The volume of blood is further diminished. In most patients the curve of the volume of the blood runs parallel to the blood pressure, except that it lags about half an hour behind it. When the circulation is sluggish, as in shock, there may be a lag of one hour or even more.

An attempt has been made to explain this interdependence between blood pressure and blood volume. With an artificial schema it was found that the output per minute through a capillary glass tube was proportioned to the product of pulse rate and pulse pressure. It was also found that the resistance was proportional to the mean blood pressure, divided by the square of the product of the pulse rate and pulse pressure.

M P

R is proportional to $\frac{M P}{(P R \times P P)^2}$

On a comparison of the average pulse pressures observed in man with the systolic pressures accompanying them, it was found that the pulse pressure is a function of the square of the systolic pressure when the circulation was normal. The ratio of $PP/(SP)^2$ is constant. In any formula for the circulation in man the viscosity of the blood must be considered. So that the output of the heart per minute (MV) may be considered as proportional to the ratio of $PP/(SP)^2$ multiplied by the rate of the heart. The normal value is 0.225 and the resistance of the arterioles may be represented by

M P

A is proportional to $\frac{\eta \times [PP/(SP)^2 \times PR]^2}{M P}$

where A is the resistance of the arteries and a high figure means increased contraction, MP is the mean arterial pressure and η the viscosity of the blood in thousandths of a dyne. When modified in this way the formula gives results corresponding to those calculated from measurement of the percentage of hæmoglobin.

The Committee of the Melbourne Hospital has appointed Mr. C. R. Stocks Secretary to the Hospital. Mr. Stocks served in the South African War and was awarded the Queen's Medal with five clasps.

¹ *Proc. Roy. Soc., London, Series B, Vol. XC., p. 415, April, 1919.*

Abstracts from Current Medical Literature.

MEDICINE.

(153) Persistent Headaches.

Kenneth Clarke remarks on the extreme frequency of persistent headache in everyday practice (*Practitioner*, May, 1919). The man with the busy practice and crowded waiting-room may be tempted to treat the symptom and disregard the cause, with success in ninety-nine cases, but disaster in the hundredth. A cerebral tumour may have escaped notice till too late. The author discusses the various causes of headache, with the treatment appropriate to each. Chlorosis or one of the rarer blood conditions, nephritis or diabetes require consideration. One of the commonest types of persistent headache is that met with in any toxic or infective state, apart altogether from the specific fevers. The gastro-intestinal tract is perhaps the worst offender. In intestinal stasis headache depends on the excess of toxic imports over toxic exports. In alcohol, lead and syphilis the pain is probably caused by direct vasomotor action on the cerebral or meningeal vessels. Syphilitic headaches and their treatment are described in detail. The headache associated with arterio-sclerosis should always be thought of when the patient's age lies in the fifth or sixth decade. It is often associated with uncertain memory, tinnitus and occasional attacks of vertigo. The allied condition of hyperplexis gives rise to a headache of a similar kind, most effectively treated by sodium nitrite. Neurasthenic headaches are carefully dealt with. They are sometimes associated with minute errors of refraction, or slight hypertrophy of the turbinates or small deviation of the septum. Many patients suffering from neurasthenic headaches are also the subjects of chronic stasis. In some in whom no organic lesion has been brought to light the use of suggestion treatment is valuable. In the severe headaches produced by shell shock and similar traumatic causes, cold water douches and massage are the most effective forms of treatment. Perhaps the most valuable of all drugs for these headaches is valerian, either valerianate of zinc and iron or ammoniated tincture of valerian. The writer compares neurasthenic headaches with migraine, detailing on the characteristic features of the latter. Headache associated with intracranial disease—tumour, abscess and meningitis—is deep-seated and most intense, giving rise to a sensation that the skull must burst. Tuberculous meningitis and cerebro-spinal meningitis should not be lost sight of. Apart altogether from neurasthenia, headaches may be due to errors of refraction and lesions of the nose and its appendages. An intense frontal headache is frequently the first warning of frontal sinus disease. Lauder Brunton is quoted as writing that

90% of all headaches were due to eye-strain and the remaining 10% were made up of those due to defects of the nose, throat or teeth. The author mentions headaches caused by tight lacing, tight collars and tight hats, particularly the modern army cap, and concludes by referring to sunstroke.

(154) Anthrax.

Charles L. Mix describes in detail six cases of malignant pustule occurring at the Base Hospital, Camp Mills, Long Island (*Medical Clinics of North America*, September, 1918). The diagnosis, on the whole, is easily made. The appearance of the sore suggests something inimical to life. Cultures are not the best diagnostic test. A small quantity of the pus and some serum from the pustule should be taken and stained. The Gram-positive bacillus can be identified by its size, appearance and spores. The pustule is from 0.6 to 1.2 cm. in diameter. There is usually a history of very short duration of illness, with great severity of intoxication. Within 12 to 15 hours after the appearance of the pustule, cellulitis has started. The pustule is almost invariably black in the centre, surrounded by fine punctate pustules. About the sore there is usually marked induration, which may extend for 2.5 or even 5 cm. In the outlying district nature makes every effort to "coffer-dam" the infection by blocking the lymphatics. This leads to marked cellulitis, extending for many centimetres. Constitutional symptoms are extremely severe. Patients complained of severe headache and pain in the extremities and a feeling of prostration and malaise. The next step is to give intravenously 100 to 200 c.cm. of anti-anthrax serum. It is probably not necessary to inject any serum about the site of the pustule. The pustule should be excised under local or other anæsthetic. The wound should be left open, but in three or four days, when the cellulitis has begun to subside under the influence of the serum, the wound can be sutured and there will usually be prompt healing. The six patients dealt with got their infection from shaving and there is reason to believe that the rabbit hair used in the manufacture of the brushes was responsible, although no anthrax bacilli could be found in the brushes. The author does not deem it necessary to inject the pustular area with pure carbolic acid, as advised by A. McGlannan in cases where excision of the focus of infection would produce great mutilation. Anti-anthrax serum was used by Sclavo ever since 1898; he reported a mortality of 6.09% in 164 cases of anthrax in man. Kolmer's statement that, in his experience, patients with sterile blood-culture have invariably recovered, while those with bacillæmia have usually died, is really meaningless. There are not two classes of anthrax patients—those with bacteria in their blood and those without. There are, however, two stages; one in which the germs have not yet reached the blood and the other in which they have. In due course the second stage would follow the first.

The prognosis of untreated cases is bad. A few have been reported as recovering more or less spontaneously, but, unless there is prompt excision of the sore and administration of serum, a fatal issue can be looked for. Prompt diagnosis, prompt administration of sufficient anti-anthrax serum (one patient in the series receiving 800 c.cm.) and prompt excision of the sore should lead to recovery.

(155) Spontaneous Pneumothorax.

F. Parkes Weber (*Practitioner*, April, 1919) gives an account of some unusual cases of spontaneous pneumothorax, by which he means all cases of pneumothorax other than those which are produced artificially or by trauma. In the great majority of these cases the pneumothorax is connected with pulmonary tuberculosis. The author records a case of dry pneumothorax in a tuberculous subject, in which recovery of the complication occurred, although the patient died a year later of the primary disease. A few similar cases have been recorded by other observers. He gives details of another case in a man, aged 30, in which a hydro-pneumothorax gradually disappeared. The patient was a tuberculous subject and had tubercular lesions of the elbow, epididymis and some bones. Recovery was apparently complete in this case. He refers to another patient, a girl, aged 12 years, who developed pneumothorax as a complication of pulmonary tuberculosis. Later a clear serous effusion was discovered in the pleural cavity. The pneumothorax disappeared after a time, but the patient died some months later. Another patient had pyo-pneumothorax, which was treated by resection of a piece of rib. Recovery ensued, although it was shown by the tuberculin test that the patient was mildly tubercular. In addition to his tubercular cases, he gives details of some idiopathic cases. One man, whose previous history was excellent, suddenly felt a sharp pain and his breath became short. He was found to have a pneumothorax. Recovery followed. In a second case a serous effusion complicated the entry of air into the pleura. In a third case the patient recovered completely from an idiopathic pneumothorax; he was able to insure his life shortly after, five years' loading being required. In the last group the pneumothorax followed an attack of influenza. His patient was found on the twelfth day of the influenza to be extremely dyspnoic and cyanosed. The cardiac apex beat was displaced to the left. The right side of the chest was resonant, but much less than the left side. All the signs of pneumothorax were present. The symptoms became less severe on the following day, but no real improvement took place and the patient died on the fourteenth day of illness. It was found post-mortem that there were several small abscesses situated sub-pleurally, in the lower part of the upper lobe of the right lung. It was thought that one of these had burst into the pleura.

NEUROLOGY.

(156) A Phenomenon of "Heteræsthesia."

Graham Brown and Stewart (*Rev. of Neurol and Psych.*, July-August, 1918) describe a new phenomenon which they call heteræsthesia. The term denotes a difference in the degree of subjective sensibility to stimuli of equal degree applied to different parts of the skin. When a stimulus of a constant strength (the scratch of a pin, the faradic current) is drawn across the skin, the subject states that an apparent change in sensation occurs at certain comparatively stable lines of demarcation. The phenomenon has been observed in two cases of compression of the cervical spinal cord, in one case of fracture of the skull with severe concussion and in six cases of concussion from shell burst. In the latter the condition was transitory and the sign disappeared with the clearance of the signs of concussion. As may be seen from the charts which illustrate the paper, the lines agree remarkably with the supposed boundaries of the areas of peripheral distribution of the afferent posterior root fibres of the spinal cord. The observers think that the influence of suggestion in the production of these lines can be excluded; and in explanation of the curious fact that in their topography the well-known phenomenon of overlapping is absent, they offer the opinion that the lines of change are those of segmental and not of root areas and that the heteræsthesia points to a condition of change of excitability between adjacent segments of the spinal cord. If it be conceded that the areas are segmental, the observations afford information upon a little-known subject, the dissociation of sensory function in segmental areas of the skin.

(157) Focal Infections in the Psychoses.

Henry A. Cotton (*Journ. of Nerv. and Ment. Dis.*, March, 1919), from observations in the New Jersey State Hospital for Mental Diseases, is convinced that chronic or focal infections of the teeth, sometimes due to faulty dentistry, play an important part in the etiology of the psychoses. He urges a thorough search for such infections and brings examples to show that their removal may clear up certain mental disorders, when other means have failed. Prophylaxis in mental disorders should include the education of medical practitioners and the public in regard to the danger, to mental as well as to physical health, of infected teeth, and the difficulty in locating such teeth, without a competently conducted X-ray examination. The value of a resident dentist, a bacteriologist and a radiologist on the staff of a mental hospital is emphasized.

(158) The Syndrome of the Foramen Lacerum Posterius.

Maurice Vernet (*Rev. de Neurol.*, November-December, 1918) records 28 cases of the syndrome of *foramen lacerum posterius*, which consists of a combined paralysis of the glossopharyngeal, pneumogastric and spinal accessory nerves. After discussing the anatomy of the part, he analyses the

syndrome. Lesion of the glossopharyngeal nerve is shown clinically by the sign of paralysis of the superior constrictor of the pharynx, namely, difficulty in swallowing solids and by deviation of the palate towards the sound side, on phonation. A less obvious and less constant indication is affection of the sense of taste, on the posterior third of the tongue, homolaterally. Lesion of the pneumogastric nerve is shown by hemipalatal or hemipharyngeal anaesthesia, reduction of salivation and respiratory trouble (dyspnoea, pseudo-asthma and cough). Lesion of the spinal accessory nerve affects the internal and external branches and is shown by palatal paralysis (nasal regurgitation of fluids), hoarseness (impaired movement of vocal cord), acceleration or irregularity of the pulse and paralysis of the sterno-mastoid and trapezius muscles. In brief, the triad of symptoms by which the syndrome is recognized is difficulty in swallowing solids (paralysis of pharynx, nasal regurgitation of liquids (paralysis of palate) and hoarseness (laryngeal paralysis). The most frequent cause of the syndrome is a trauma, arising either in war or under civil circumstances; in some cases, however, and this is very important, local pressure (adenoma), or some inflammatory condition is the cause, while in others, called symptomatic, syphilis appears to be an essential factor.

(159) Peace and War Neuroses.

Ross (*Proc. Roy. Soc. of Med.*, March, 1919) writes that in the treatment of the neuroses there is one point which is of capital importance, namely, how to prevent relapse. The literature of the past four years has confirmed what was known before, that any treatment in which the physician believed would effect an apparent cure. Hypnotism, electricity, even Christian science, have their advocates, but methods which remove the symptoms in hand do not accomplish all that is necessary or possible. Faith may dispel many nervous symptoms, but rational therapy demands the disclosure of what lies behind. There is no fundamental difference between hysteria and neurasthenia or anxiety-state, and the underlying anxiety is an essential factor which must be dealt with. It can be exposed by ordinary conversational methods, the elaborate technique of psycho-analysis being rarely called for. This applies to civilian as well as to military patients. The writer's method is as follows: A full, ordinary history is taken. The patient is listened to for as long as he wishes to speak; he is given the chance of telling everything. He is then examined clinically from top to toe and is finally told that he probably labours under some forgotten anxiety. He is invited to think over this and report again. Almost always he will answer the problem for himself, reporting something which will explain the phenomena. Cases are recorded to show that such psychological treatment is neither so impossible nor so tedious as some maintain, that the neuroses are not meaningless conglomerations of

symptoms, but the expression of well-defined anxiety and that the prevention of relapse is bound up with the discovery of this anxiety and with its abolition, or its perception by the patient in another light.

(160) Treatment of Essential Facial Neuralgia by Local Alcoholization.

Sicard (*Boston Med. and Surg. Journ.*, September, 1918) states that the only effective treatment of essential facial neuralgia is by chemical destruction of the branches of the nerve. He uses alcohol (70% to 95%) and injects not more than 1.5 c.cm. under local anaesthesia into the foramina which can be reached. He prefers to inject the superficial foramina several days before the deep. Relapses may occur in from 12 to 18 months. There are two indispensable conditions, the first of which is that the case must be one of the so-called essential variety. These points are given in differentiation. The case is not true (1) when the pain persists continually; (2) when neuralgia, untreated previously, is accompanied by anaesthesia of skin or mucous membrane; (3) when neuralgia, untreated, is complicated by affection of other cranial nerves, shown by trismus, diplopia, facial paralysis, lingual hemiatrophy, etc.; (4) when the neuralgia, *ab initio*, affects the three branches of the trigeminal nerve. In such a case the neuralgia is secondary to some exo- or endo-cranial lesion, such as syphilis, tuberculosis, cancer, abscess, sinusitis. Nor is the injection of alcohol of use in post-herpetic neuralgia, because this is due to a central lesion. The second essential condition is really a reflex of efficient injection, namely the production of anaesthesia of the area supplied by the injected nerve, which should supervene directly after the injection and may be accompanied by a false sense of induration and swelling.

(161) The Use of Calcium in Excited States.

Graves (*Journ. Ment. Science*, April, 1919) writes that, according to Bayliss, calcium is necessary for the normal effect of adrenalin on sympathetic nerve-endings. On the assumption that in acute excited states there can be no lack of adrenalin in the body, but an absence of its fixation "ion," the writer gave calcium lactate in 0.6 gm. doses to many patients with more or less acute excitement. The cases include, of the manias, epileptic, simple, delirious and recurrent; agitated melancholia and recent acute hallucinations. The effect of the drug is to calm the mental state and improve the physical condition. A rapid, weak pulse becomes slower and stronger, any diarrhea present ceases or is improved, a dry, harsh skin becomes moist and supple, the appetite also is improved. The younger the person the better the result; similarly, the more recent the disorder, especially if of influenzal origin. Some patients have responded, although over 40 years of age, and in several old-standing cases there has been temporary improvement.

British Medical Association News.

SCIENTIFIC.

A clinical meeting of the New South Wales Branch was held at the Royal Prince Alfred Hospital, Camperdown, on August 8, 1919, the President, Dr. F. P. Sandes, occupying the chair.

The following programme was arranged. The clinical histories of the majority of the cases exhibited are being reproduced in the columns of this *Journal*.

Dr. H. J. Daly exhibited specimens of a fibromyoma of the uterus and an ectopic gestation complicated by torsion of the Fallopian tube.

Dr. A. E. Mills demonstrated the case of a man suffering from a lesion of the optic thalamus; the case of a female patient with spastic paraplegia of spinal origin (see *The Medical Journal of Australia*, October 18, 1919, page 331); and the case of another female patient with peripheral neuritis due to the toxæmia of pregnancy (see *The Medical Journal of Australia*, October 18, 1919, page 331).

Dr. M. R. Flynn demonstrated for Dr. C. Bickerton Blackburn a case of chronic pleurisy following influenza and *post mortem* specimens of malignant disease of the kidneys and liver.

Dr. E. W. Fairfax showed two patients, the one suffering from *amyotonia congenita* and the other suffering from Raynaud's disease (see pages 374 and 375).

Dr. R. Gordon Craig gave a demonstration of the use of the naso-pharyngoscope.

Dr. John Morton discussed the cases of two patients with chronic ulcer of the stomach and duodenum respectively (see page 375).

Dr. St. John W. Dansey dealt with a case of chronic peritonitis with fibrosis and gas formation, and also read the notes of a case of lymphosarcoma.

In the absence of Dr. E. H. Molesworth, Dr. A. H. Tebbutt read the notes of cases of *lupus vulgaris* and syphilitic ulcer of the thigh and showed the patients.

Dr. Tebbutt on his own behalf gave a description of the characters of the various members of the pneumococcus-streptococcus group and exhibited cultures and end results of tests.

Dr. L. G. Teece presented a patient with primary nerve myopathy and discussed the case.

Dr. H. J. Clayton, the Medical Superintendent of the Royal Prince Alfred Hospital, conducted the members through the new kitchens and X-ray Department.

The New Kitchens.

He pointed out that for many years prior to 1918 they had experienced great difficulty in providing adequate facilities in catering for the ever increasing number of patients in the hospital. In 1892, when the Nurses' Home was opened, there were three kitchens in the hospital. There was one for the patients, 224 in number, one for the nursing staff, consisting of approximately 50 persons, and one for the medical staff of six officers. The hospital had grown to such an extent by 1918 that it was necessary to find floor space and accommodation for the kitchen equipment and staff to serve 398 patients, 160 members of the nursing staff and 25 medical officers, making a total population of 583. The growth had been gradual and consequently there was great difficulty in meeting the requirements of those within its precincts. Patients in hospital and the nurses needed before all else a sufficient and palatable diet. If the diet could not be efficiently prepared and served, much of the effect of the rest of the treatment would be nullified. Dr. Clayton stated that this was particularly essential in a large public hospital, whose patients were frequently ill fed and ill cared for in their homes.

The hospital had overgrown its catering arrangements to such an extent by the year 1918 that a methodical disposition of the equipment had become impossible. Cooking utensils and catering provision had grown in an irregular manner and the appliances had been added here and there as the necessity arose. The limited accommodation and equipment rendered it unavoidable to take some of the food

off the ranges as early as 10.15 a.m., in order that all the dishes required for the dinners might be ready for serving in the wards by 12.30 p.m. The transport of the dinners was carried out on antiquated trolleys packed with tins containing receptacles of varying size in which different dishes could be placed. In these circumstances it became necessary to re-heat much of the food when it arrived at the wards, as by that time it had grown cold. This re-heating frequently ruined the food. Moreover, it represented a great extravagance and entailed a considerable waste of labour.

The Board of Directors had realized the need for some radical change. The matter had been discussed for some time when action was precipitated by the undertaking to accommodate 120 military patients in addition to the usual patients, thus bringing the total up to 520. This increase entailed an augmentation of the staff and all these additional persons had to be fed. After some delay occasioned by difficulties of a financial nature, it was decided to reorganize the catering arrangements of the hospital. It was thought that temporary alterations would be inexpedient and in view of other pressing needs of the institution, the Board determined to adopt a wide policy. The following work was included in the scheme:—

(i.) An additional story to be built on the old kitchen block to provide one central kitchen for the whole hospital instead of three. It was held that this centralization would lead to economy of labour, staff, equipment and fuel, estimated at £500 per annum and to greatly increased efficiency.

(ii.) The portion of the Nurses' Home and the resident medical officers' quarters previously used as kitchens, etc., to be remodelled to provide six additional rooms for the nurses and seven in the resident medical officers' quarters.

(iii.) The old kitchen to be converted into a central and suitable X-ray Department and to equip this department with the most modern apparatus.

(iv.) The old X-ray Department to be added to the dispensary adjoining it, to enable the dispensary staff to make its own preparations. This would effect a saving of about £300 a year.

In carrying out these innovations in the kitchen, the Board sought the advice of Mr. Bridges, the Catering Manager of Sargent's, Limited. This gentleman proved a most painstaking and generous expert. He was shown the whole of the then existing arrangements in working for several days in succession and discovered the difficulties and faults. Conferences were then held with the architects, represented by Mr. Budden. The construction was undertaken under constant supervision and as a result the hospital now possessed a kitchen which was as good as anything of its kind. At the present time meals for 825 persons were prepared daily, and the capacity of the department would admit of meals being prepared for one thousand persons at one time.

Three principles had been established. In the first place there was centralization. The kitchen was situated in the centre of the hospital and was surrounded by the wards on all sides. It was placed midway between the topmost and the lowermost floors of the hospital. In this way unnecessary transport was avoided. At the same time it was on the topmost floor of its own block. This obviated all the disadvantages of a basement kitchen. Dr. Clayton pointed out that all modern kitchens were built on the uppermost floor.

In the second place they had aimed at uniformity in equipment. The patients, nurses and medical officers of the institution were provided from one kitchen, so that a high standard was insured and economy attained. Every receptacle and every unit in the service was uniform. With but few exceptions each ward in the hospital contained 32 beds. A uniform container for each separate article of diet was employed. It had been found that the number of patients for whom any one article of diet was ordered, did not vary greatly in the different wards. The containers were fitted in large uniform outer containers, one for each ward. There was a spacious hot press comprising compartments of uniform size, numbered in correspondence with the wards. The large containers with the various dishes properly prepared and enclosed in the smaller containers were introduced into the hot presses until the dinners were served. From the hot press, the containers were transferred to non-conducting

tins of uniform size at the appointed time. The tins kept the food hot for a period of two hours if necessary. They were packed on specially built trolleys, each trolley accommodating four tins. Special tubs had been provided for the washing of the tins and containers. The size corresponded exactly to the requirements.

The third principle that had been followed was the saving of labour. There were no shelves in the kitchen. This obviated unnecessary work and provided no harbour for dirt and cockroaches. Strong wire mesh was used where shelves were necessary. The floors and walls were of tile, so that the whole kitchen could be hosed after each meal.

There were no separate rooms, such as sculleries, vegetable rooms, etc.. All the work was carried out in the one immense kitchen. In this way time was saved and energy conserved. The equipment was stored in the "order of working." First there were the preparation tables for meat, vegetables, etc.. Next came the ovens (coal ranges, gas stoves and steamers heaters) in a long line on two sides of the room. Next came the dishing tables and following these there was the hot press for the containers. The press opened on the one side to the dishing tables and on the other to the platform on which lay the non-conducting "thermos" tins. Beyond the platform the trolleys were drawn up. In addition there were a thousand and one minor labour-saving devices, including the dining room for the cooks and kitchen maids, the electric potato peeler, the ice chest provided with a special current of cool air, the hood over the cooking stoves and ranges to carry off the fumes, the electric ventilators, the curve in the floor to carry away the overflow from the steam boilers and to permit of easy hosing down, the vegetable preparation sinks and so on.

The results of these innovations were that the kitchen staff had been reduced, the food was removed from the fire at 12.10 p.m. and served steaming in the wards at 12.30 p.m.; no labour or fuel was wasted in the wards for the purpose of reheating and a very considerable reduction in expenditure had been effected.

The X-Ray Department.

Dr. Clayton then passed on to the description of the innovations of the new X-ray Department. The department was situated in close proximity to the Out-patient Department and in a central position in the institution. It was stated to be as large as the X-ray Department at the London Hospital, the largest in the world. It had every modern arrangement for the convenience of the medical officers, the staff and the patients. There were two medical officers' rooms, one for diagnosis and one for treatment. There were a development room, with doorless entrance, two "diagnostic operating" rooms (one for screening and one for plates), two "bismuth meal" rooms (one for males and one for females) and three therapeutic rooms. One of the last-named rooms would be furnished and equipped for treatment by radium. The latest apparatus, two diagnostic and two therapeutic plants, had been ordered and should be installed within a few months. All the old apparatus which, though not many years old, was out of date for present-day methods, was being sold. The honorary medical officers of the department had spared no trouble in collaborating with the architects and in advising those concerned with the selection of the apparatus. When complete the department should be second to none.

The members were entertained at supper at the Resident Medical Officers' Quarters at the termination of the meeting.

The undermentioned have been elected members of the New South Wales Branch:—

- Charles Badham, Esq., M.B., 1917 (Univ. Sydney), Clifton Gardens Hotel, Mosman.
- Eric Payten Dark, Esq., M.B., Ch.M., 1914 (Univ. Sydney), Bungedore.
- Douglas Robson Wallman, Esq., M.B., B.S., 1918 (Univ. Adelaide), 52 George's Crescent, Drummoyno.
- Arthur Thomas Rowlandson Robinson, Esq., M.B., Ch.M., 1917 (Univ. Sydney), Highfield Road, Lindfield.
- Henry Laurence Tooth, Esq., M.B., 1915 (Univ. Sydney), Savoy Flats, Hardie Street, Darlinghurst.
- Hereward Leighton Kesteven, Esq., M.B., Ch.M., 1916, M.D., 1919 (Univ. Sydney), Maroubra.

The undermentioned have been elected members of the Victorian Branch:—

- Leonard Walter Johnston, Esq., M.B., Ch.B., 1918 (Univ. Melb.), Stanley Avenue, Kew.
- Edward Rogerson, Esq., M.B., Ch.B., 1913 (Univ. Melb.), Kaniva.

We wish to call the attention of medical officers returning from active service abroad to the two organizations which have been established for the purpose of perpetuating the *esprit de corps* among returned men. We hope that within a short time similar societies will be founded in the other States. Medical officers returning to Victoria should lose no time in applying for membership of the Returned Medical Officers' Association of Victoria (Honorary Secretary, 25 Blyth Street, Brunswick), while those returning to New South Wales should send their applications to the Society of Returned Medical Officers of New South Wales (Honorary Secretaries: Lieutenant-Colonel H. R. G. Poate and Lieutenant-Colonel C. E. Wassall, D.S.O.).

PREVALENCE OF PNEUMOCONIOSIS.

An Interim Report has been presented by the New South Wales Board of Trade to His Excellency the Governor of New South Wales on the prevalence of miners' phthisis and of pneumoconiosis among those employed in metalliferous mining and in the rock chopping and sewer mining industry as well as in ore treatment, refining and reduction works. In June, 1918, the Minister of Labour and Industry asked the Board of Trade to consider the matter of the health of these employees, to take such evidence as it thought fit and to report its conclusions to the Government. The Board was asked to make inquiry, especially as to the extent to which miners' phthisis exists among these employees and as to the advisability of including this disease in the schedule of the *Workmen's Compensation Act, 1916*. In a later communication the Board was requested to extend its inquiry to ascertain the degree to which pneumoconiosis existed among quarrymen and stone masons. The Board was also asked to state what relief, additional or alternative to the inclusion of the disease in the schedule of *Workmen's Compensation Act, 1916*, should be provided in respect to the incidence of the disease among these individual classes of employees.

The report is printed in two volumes, the first containing the report proper and its appendices and the second the evidence taken by the Board, together with copies of the exhibits tendered to it. The report itself occupies 150 pages and is divided into eight chapters. The first chapter contains an account of the parties concerned in the public inquiry and of the parties claiming continuous representation. It deals also with the personal inspections made by the Board and with the sets of questions issued to different bodies. In the second chapter the scope of the inquiry is outlined. It is pointed out that the questions to which answers were sought, would seem to admit of concise and simple answers, but have been found after attention to have reference to a problem of a highly involved character. Mortality data, which are the only relevant figures provided by the statistics, do not provide an answer to the queries. Morbidity is the real issue and mortality rates form an imperfect index to conditions of morbidity. Again the risk arising from dust is not constant and is frequently absent when dust is greatly in evidence. Since the Board has not been able to find answers to the questions put by the Minister in the statistical records available in New South Wales and the Commonwealth, the Board has construed the terms of the reference on a wide basis. It has set itself the task of showing the nature, course and effects of pneumoconiosis. It has collected opinions concerning its incidence, the social evils which are to be apprehended from it and the class of legislation demanded by its prevalence. It has taken direct and circumstantial evidence about the extent to which the disease exists within the State. It has examined the statistical data with reference to the occurrence of miners' phthisis among the various classes of workers not only in New South Wales, but also in the Commonwealth. It has dealt with the various measures of relief afforded in different countries,

In conclusion it makes certain inferences and offers some recommendations.

In the third chapter the physiological and pathological data about pneumoconiosis are set forth in a series of extracts from different sources. The account opens with an illuminating extract from the General Report of the Miners' Phthisis Preventive Committee of South Africa, upon the main features of the air passages in relation to the inhalation of dust and on the course of the disease produced by certain kinds of dust. An extract from the British Royal Commission of 1914 follows. This records the opinion that tuberculosis occurs in the later stages of the disease. The American view obtained from the report of A. J. Lanza, E. Higgins and G. S. Rice to the Department of the Interior, is shown to correspond with this opinion. An extract from the report of Dr. Walter Summons on the disease in Victoria relates the course of the disease. He describes the progress of the disease leading up to tubercular infection.

In the fourth chapter a detailed summary is given concerning the legal and legislative enactments of the United Kingdom, South Africa, the United States of America, New Zealand, Victoria, Western Australia and Queensland. In the fifth chapter a summary is given of the previous inquiries in the State of New South Wales. In the sixth chapter the statistical data for New South Wales and for the Commonwealth are discussed in relation with other information obtained by the Board. In the seventh chapter the accepted facts are stated and a description is added of the various measures of relief that may be adopted, especially in regard to workmen's compensation acts. In the last chapter the conclusions and recommendations are enunciated.

The Board did not find it possible to answer the questions of the reference from the Minister about the prevalence of pneumoconiosis in the forms of silicosis and miners' phthisis among the members of any of the specified classes of employees by stating the number or proportion of persons affected. It was able to arrive at decisive conclusions upon the basis of probabilities in the case of two of these classes and to make a statement of its attitude towards the uncertainty which exists about the prevalence of the disease among the other classes. Stone masons and sandstone quarrymen die of phthisis of all forms twelve times and nine times as frequently as the statistical class known as all occupied males over 15 years of age. It is admitted that these men work upon stone containing free crystalline silica, that the work has always been regarded as dangerous and that special conditions of employment have been granted for these reasons. The Board recommended that those in these occupations suffering from the disease receive immediate relief. In respect to the other classes of employees, *viz.*, the sewer miners and rock choppers, metalliferous miners and employees in ore treatment, refining and reducing works the Board does not regard its investigation as concluded. There appears to be evidence of the prevalence of miners' phthisis among sewer miners and rock choppers and of excessive prevalence of pulmonary tuberculosis. Evidence has, however, been brought forward to show that the conditions of relief granted to these workers from time to time in the way of precautionary measures have been to some extent successful. The Board considered that the air conditions in the sewer mining work in the Hawkesbury sandstone should be regarded as suspect until evidence based on analyses of the air and on medical examinations of the workers are available.

In regard to metalliferous miners it must be assumed that the dust risks vary with the character of the rock in which the mining is carried out. Some dusts are comparatively innocuous. The element of uncertainty with regard to risk from dust can be eliminated by special tests. By sampling the air and examining the character of the dust and by clinical and radiographic medical examinations of the workers, information of an accurate nature can be obtained. If it is found that a disabling condition of fibrosis of the lung is associated with work in any industry, the need of relief is apparent. While statistics afford no evidence of any excessive proportion of pulmonary tuberculosis among metalliferous miners in New South Wales, the Board cannot conclude that miners' phthisis is not prevalent. In fact, it inclines to the belief that dust accounts for certain respiratory disorders common in Broken Hill. The Board recom-

mends that a technical commission of inquiry with the necessary staff of assistants be appointed forthwith for the purpose of examining and reporting upon the dust conditions in the tunnels and other excavations made in Hawkesbury sandstone, in the metalliferous mines of the three centres, Broken Hill, Cobarr and Ardethan and in the ore treatment, refining and reduction works associated with such mines and at similar works in other centres; and for the purpose of determining by clinical and radioscopic means the morbidity conditions of the respiratory organs of not less than 30% of the employees in mines and treatment works.

The Board also recommended that a plan for compensation of stone masons and quarrymen be instituted in New South Wales on the lines of the Workmen's Compensation (Silicosis) Act of England, 1918. For this purpose it will be necessary to establish in the State a scientific body, having authority to conduct investigations to ascertain the incidence and effects of the disease and to safeguard the administration of the compensatory and remedial provisions of the scheme. The Board entirely disagreed with the views expressed by commissions in Western Australia and in Queensland that the compensation of sufferers from pneumoconiosis should be a matter of Federal rather than State policy.

THE HEALTH OF SCHOOL CHILDREN IN TASMANIA.

The annual report of the Director of Education of Tasmania for the year 1918 contains a section of four paragraphs dealing with the medical and dental inspection of school children. The Director, like other Directors of Education, gives much greater prominence to every other portion of the work than to that concerned with the bodily and mental welfare of the pupils. He points out that the medical inspection of the children attending the schools at Hobart and Launceston is carried out by part-time medical officers. A school nurse is engaged primarily for the purpose of following up the children found to be defective at the inspection and endeavouring to persuade the parents to seek a remedy for their defects. In the country schools the inspection is carried out by two full-time medical officers, who look after the hygienic condition of the schools, in addition. Their duties also cover the examination of prospective entrants to the service and they are required to give lectures to the students at the Training College. In regard to the dental work, it appears that the primary examination is carried out by the school medical officer, who sends notices to the parents of children with defective teeth. If no treatment is obtained privately within a month or some reasonable time, the children are required to attend the dental clinic for the purpose of treatment. In Hobart and Launceston the clinics are stationary, while a mobile clinic visits ten country municipalities.

Southern District.

In a special chapter of the report abstracts are published from the annual reports of the school medical officers. During the course of the year, 112 schools were visited in the Southern District by Dr. E. M. Hawkins. Of these, 102 were State schools, seven were convent schools and two were free kindergartens. The number of children examined was 4,258. Of these, 116 had enlarged tonsils sufficient to produce embarrassment. The number of children with adenoid vegetation is not mentioned, although the total number of naso-pharyngeal defects is given at 341. It is remarked that many of the children were suffering from two defects. Among the instances of defective vision were 71 in which the vision was less than $\frac{1}{60}$ in one or both eyes. Dr. Hawkins records the case of one child whose vision was $\frac{1}{60}$ in both eyes; his father refused to allow the child to wear glasses. There were 10 cases of strabismus, one of nystagmus, two of congenital cataract, two of chronic corneal ulcers and one each of ophthalmia, traumatic cataract and ptosis. The number of children whose hearing was $\frac{1}{10}$ or less, was 36. In the majority of the cases the deafness was associated with some naso-pharyngeal defect. There were only two cases of otorrhoea notified. Defective speech was discovered in 13 children, while 12 others were stutterers. There were 62 children with goitre and four with valvular heart disease.

Eleven children were reported on account of anæmia, while a few cases of enlarged cervical glands, chorea, congenital deformities, tubercular disease of bones and epilepsy, were met with. There were 30 cases of blepharitis. Of the skin conditions, scabies were found nine times, psoriasis once, *alopecia areata* once, eczema once and dermoid cyst once. Pediculi were found in only four children. Dr. Hawkins states that the number of children with lice in their hair has decreased steadily since she has had charge of the medical inspection and she expresses a justifiable hope that pediculosis may disappear altogether from the list of defects by next year.

Among the 4,258 children, 23 were classified as being affected with "marked mental backwardness." It is stated that some of these children are mentally defective. The record is surprising. These figures imply that only 0.5% of the children examined were backward and that the frequency of definite mental deficiency was even less. Dr. Hawkins expresses the opinion that "the time will soon be ripe for the detailed and expert examination and treatment of these children." We venture to state that a thorough investigation of school children by an expert medical psychologist with the view to the segregation of the children whose mental development is delayed or arrested, and the introduction of training adapted to the qualities of the mind of the individual children, has been an urgent necessity for a very long time. Treatment, in the accepted meaning of the term, is out of the question, since it is impossible to apply a remedy to an absent group of cells or to an absent group of functions.

In fifteen schools parotitis was prevalent during the year. Excellent work in preventive medicine was carried out in connexion with diphtheria outbreaks. In one country town this disease caused the death of two children and it threatened to become wide-spread. At the first visit two carriers of diphtheria bacilli were discovered, isolated and subjected to treatment. A second visit was paid and as a result of systematic collection of material on swabs, 37 further carriers were found. The children affected were not allowed to return to school until their throats were shown to be free from bacilli.

In conclusion Dr. Hawkins calls attention to the fact that many teachers fail to recognize the importance of opening windows at the top to permit the escape of vitiated air.

Northern District.

In the Northern District Dr. M. J. Moffatt visited 91 schools and examined 4,267 children. The defects discovered at the routine examination of the throat, mouth, eyes, ears, skin and chest included 173 instances of enlarged tonsils and 20 of adenoid vegetations. In two children enlarged cervical lymphatic glands were noted. Goitre was met with 26 times, but in the majority of the cases the hypertrophy of the thyroid gland was not associated with any constitutional symptoms.

Of 31 children with defective hearing, 11 were almost devoid of the power of hearing and the remainder were hard of hearing. One child was suffering from otorrhœa. Dr. Moffatt found that the deafness was frequently grafted on neglected post-nasal growths.

The number of children who failed to pass the % vision tests was 56, or 1.3% of the total number. In many instances the children were wearing glasses unsuited to the error of refraction present. Tasmania has itself to blame for defects of vision are not remedied in a suitable manner, since Parliament has recognized the spectacle maker as an individual competent to measure errors of refraction. The fruits of this mischievous piece of legislation will soon become apparent in the increase of serious disturbances of vision.

The skin affections discovered were a rash similar to scabies in 14 children, ringworm, leucoderma, psoriasis and *crithema nodosum* in one child each. Five of the children were found to be suffering from severe anæmia and the parents were advised to obtain suitable medical treatment.

Dr. Moffatt finds that the provision of a school dentist and the arrangements enabling the children to have the defects discovered at the examination remedied at the clinics have led to a great improvement in the conditions of their mouths. Unfortunately there appears to be some difficulty on the part of the dentist in keeping pace with the notifications.

The chief criticism of the hygienic arrangements of the schools is directed toward the frequency of wrong systems of lighting. Dr. Moffatt records the fact that in small country schools that have not been built for the purpose, front lighting is common. The disadvantages of this source of light is too well known to need justification.

Hobart.

The Hobart schools have been under the medical supervision of Dr. E. T. Macgowan since April, 1918. All the schools were visited at regular intervals during the remainder of the year. He complains that the work was hampered by the absence of the school nurse on "sick leave" for a considerable period.

The number of children examined is given as approximately 1,500. Of these 167 were found to have hypertrophy of the tonsils and adenoid vegetations, 120 diseases of the eye or defective vision, 31 anæmia, 22 pediculosis, 17 diseases of the ear and deafness, 12 diseases of the skin, 10 nasal defects, 7 enlarged glands and 3 ringworm.

A table is published of the number of visits paid by the school nurse, the number of children examined, weighed, measured and generally inspected. Dr. Macgowan adds some general remarks on the condition of the schools.

Launceston.

In Launceston Dr. G. H. Hogg carries out the duties of part-time medical inspector of school children. His report is brief and deals generally with the results of the examination. From an appendix we learn that treatment was obtained for 71 out of 104 children who were suffering from enlarged tonsils and adenoid vegetations, for 34 out of 40 children suffering from enlarged cervical lymphatic glands, for 32 out of 42 children with defective vision, for all the 18 children with deafness and discharging ears and for all the children found to be suffering from other pathological conditions, including diphtheria, scarlet fever, varicella, enteric fever, poliomyelitis, morbilli, parotitis, tuberculosis, pneumonia, rheumatism, tonsillitis and other infective processes, scabies, ringworm, eczema, impetigo and septic sores and cuts, as well as other usual affections. Dr. Hogg states that the value of the services of the school dentist is diminished by the fact that he is frequently required to pay visits to country schools.

Special Correspondence.

(By Our Special Correspondent.)

CANADA LETTER.

The Canadian National Committee for Mental Hygiene.

At a meeting of this Committee, which took place in Montreal, December, 1918, it was decided to make a comprehensive survey of the feeble-minded and insane in the city of Montreal and to endeavour to apportion as accurately as possible the relation of these disorders to crime, prostitution and pauperism. In Canada the great obstacle towards united action in all social welfare matters has lain in the fact that conditions in each province differ and no coherent policy has been followed throughout the Dominion. In placing its services at the disposal of the provincial governments, the National Committee hopes that it may be instrumental in bringing about more unity of action. Statistics collected by the Manitoba Public Welfare Commission show that the great majority of the inmates of jails and asylums are of foreign birth.

A Bureau of Vital Statistics.

The formation of a Bureau of Vital Statistics has been under consideration for some time. Here, again, the different legislation and the different modes of procedure existent in the various provinces constitute the chief difficulty. A conference in regard to this matter was held in Ottawa in June, 1918, and some agreement has been reached as to the general principles involved. The whole subject is still under discussion and it is hoped that, eventually, a Bureau of Public Health will be established at Ottawa which will number among its activities all matters pertaining to health, the collection of vital statistics and the control of immigration as far as the health of immigrants is concerned.

Industrial Research.

Another matter that is still under consideration is the establishment at or near Ottawa of a Central Institute for Research. The intention is to erect a building which will contain sufficient accommodation for some fifty laboratories, where industrial research of all kinds will be conducted. The estimated cost of such a building is approximately \$500,000. Such an institute would provide the modern scientific equipment necessary to investigate Canadian raw material, industrial processes and manufactured products. It would also serve as a national laboratory for standards of all sorts, for the testing of materials and for experimental and research work upon the utilization of by-products and other industrial problems. In view of the development of Canada's tremendous store of natural resources which is expected to follow the war, and the increase in the number of industrial establishments, the desirability of such an Institute cannot be doubted.

The Physique of the Nation and Hygiene.

The results of the physical examination of military recruits during the war have made the public realize, as perhaps nothing else could have done, the necessity for conserving health and preventing the spread of disease. With Saskatoon as leader, some of the western cities have drawn up resolutions urging upon the Provincial and Dominion Governments the desirability of taking advantage of the records of examinations made. The petition was considered in council and the Minister of Militia and Defence has been instructed to prepare a report on the subject.

Some months ago the sum of twenty-five million dollars was voted by the Dominion Government for the improvement of housing conditions. Both in Toronto, and particularly in Montreal, there are districts where conditions are as bad as in almost any European city. Attention was directed to this during the recent influenza epidemic. Some 3,000 persons die annually of tuberculosis in the Province of Quebec alone. Throughout this province much might be done if the people could realize the value of fresh air. The extreme cold encourages the *habitant* in his practice of hermetically sealing all windows during the winter. With a view to reducing the infant mortality rate a Bureau of Child Hygiene has been created by the Montreal Board of Health. As a few cases of smallpox have occurred in various municipalities in the Province of Quebec, the Board of Health has ordered all municipalities to pass by-laws to enforce vaccination. Compulsory vaccination is already in force in about seven hundred out of the twelve hundred municipalities of the Province.

Voluntary Aid Work.

An organization named the "Sisters of Service" has been formed in Ontario. It was inaugurated on Thanksgiving Day in the Provincial Parliament Buildings, Toronto, with the Provincial Secretary as President and the Provincial Health Officer, Lieutenant-Colonel J. W. McCullough, as Chairman of the Executive. The primary purpose of the organization was to assist in preventing the spread of influenza during the epidemic. Branches have been formed throughout the Province with the object of assisting the Government in its work of maintaining the public health.

Prohibition.

As was to be expected, a good deal of dissatisfaction exists, particularly among the working classes, with respect to prohibition. It will be remembered that prohibition was passed as a war measure throughout Canada, with exception of the Province of Quebec, where it was to go into effect in May of the present year. The argument is now offered by those who object to the measure that, since the war is over, prohibition laws should be repealed. Sir William Hearst, the Premier of Ontario, however, has stated his intention of abiding by the present temperance policy, which will remain unchanged until a year after the war, when a referendum will be taken.

War Items.

A banquet was held in Paris on the occasion of the closing of the Canadian Hospital at St. Cloud. Dr. Louis Mourier, the Under-Secretary of State for the *Service de Santé Militaire*, presided, and among those present were the Canadian delegates to the Peace Conference. Over 5,000 severely wounded soldiers have been cared for at this hospital in addition to a large number of medical patients.

McGill University is to erect on the Campus of the University a Convocation Hall as a memorial to those students who fell during the war.

The Medical History of Quebec.

The fiftieth annual meeting of the Canadian Medical Association will take place at Quebec next June. The Association was founded in 1867 and its first meeting was held in Quebec fifty-two years ago (on account of the war the Association did not meet in 1915 or in 1916). It is peculiarly fitting, therefore, that the fiftieth anniversary should be held in the historic city of Quebec. Comparatively little is known of the early history of medicine in Canada. Among the early French settlers were Dr. Bouchard, who was born in Paris in 1622 and died in Montreal in 1676, Louis Chartier, a surgeon, who was drowned while bathing in 1660, and Dr. Sarrazin, the naturalist, who first described the *Sarracenia purpurea* or pitcher plant and who died at Quebec in 1734. The practice of medicine was first regulated in 1788, under an Act signed by Lord Dorchester, at that time Governor of Canada. The purpose of this Act was to prevent persons practising physic or surgery within the Province of Quebec, or midwifery in the towns of Quebec and Montreal, without licence. In 1791 Canada was divided into Upper and Lower Canada, and in Lower Canada the Act remained in force until 1847. In 1795, at the second session of the Parliament of Upper Canada, an Act was passed providing for the establishment of an Examining Board consisting of "the surgeon of His Majesty's Hospital for the time being, together with the surgeons of His Majesty's regiments doing duty within the province, and all other surgeons and practitioners resident within the same, authorized to practise physic and surgery, or any two of them, of which the surgeon of His Majesty's Hospital shall be one." In 1806 this Act was repealed, as it was found impossible of enforcement.

In 1819 the Canada Medical Board was convened for the first time. As yet there was no provision for medical education in the country and students were obliged to go either to Great Britain or to the United States for their education, no easy undertaking in those days of expensive and difficult travelling.

In 1821 the Toronto General Hospital was erected. When the legislative buildings were destroyed by fire in 1834, the Hospital, being the most extensive building in Upper Canada at the time, was used for several sessions by the legislature.

In Lower Canada, where the 1788 Act was still in existence, the Montreal General Hospital had been erected about the same time as the Toronto Hospital and it was here that the first Canadian medical school was founded. The Montreal Medical Institute, as it was named, gave its first course of lectures in 1824-1825. It was soon recognized by Edinburgh and students began to go to Montreal instead of to the United States. In 1829 the Institute was merged in McGill and at the first session of the medical faculty of McGill College in 1829-1830 students to the number of thirty-five were in attendance.

The first medical journal to make its appearance in Canada was the *Journal de Médecine de Quebec*, which was published early in 1826 in Quebec City, its Editor being Dr. Xavier Tessier. The English and French languages were used with equal frequency in this publication. It is interesting to note from the quarterly reports of the Montreal General Hospital, which appeared in this *Journal*, that typhus was responsible sometimes for as many as 60% of the cases.

Reference may perhaps be made to a rather amusing example of the empiricism that prevailed at that time. In the report of the Quebec Immigrant Hospital for the year 1826, the case of a girl of 14 is cited who recovered from paralysis under the following treatment: "Cobwebs were taken internally, while tartar emetic ointment was applied with friction externally, which assisted by the best tonic diet, completed an astonishing and speedy cure."

In 1844 a regular course of lectures in medicine was commenced at the University of King's College in Upper Canada. This institute, however, disappeared upon the establishment of the Trinity College Medical School in 1850. Another school founded about this time was that of Dr. John Rolph, which was recognized by McGill, and in 1853 was incorporated under the title of the Toronto School of Medicine and is now the medical faculty of Toronto University.

Correspondence.

THE VICTORIAN LUNACY DEPARTMENT.

Sir,—Not many years ago there was a great deal of dissatisfaction amongst the medical officers of the hospitals for insane in England, owing to the miserable way in which they were being paid. The British Medical Association took the matter up and in a very short time the position was greatly improved, so that now the medical officer, instead of getting £120 to £150, gets £350 and everything found. The position in Victoria is at present very unsatisfactory, as the junior medical officer gets from £312 to £372, with a furnished house and a few allowances, and the senior medical officer gets from £396 to £446 in about eleven years and an unfurnished house and allowances. In the other States they are paying the medical officers from £500 to £575, with quarters and allowances, and in some of the States they are allowed to get all their eatables at contract prices and they are getting pensions.

There are seven positions for junior medical officers in the Victorian Lunacy Department, out of which one is filled by a permanent man at present; the other six places could not be filled, although advertised for, so they have now been filled by temporary medical officers at a salary of £450 a year, with a furnished house and allowances, which is really ten shillings a month more than a senior medical officer is getting who has been in the Department for 15 years or more and he has to provide his own furniture. Some of these temporary medical officers when appointed are only just qualified and know practically nothing about their work.

The B.M.A. ought to do something to help to remove the dissatisfaction that is being caused amongst the medical staffs of these institutions and they could easily do it if they worked on the same lines as they did in England.

I wonder how many men in the labour unions would allow unskilled men to come into their factories and work side by side with their best trained men and he paid more than these men?

During the war there were several medical officers who were not able to go to the front, but stayed here and did the work of two men without any extra remuneration and without any grumbling; they did not even object to "temporaries" being appointed then at higher salaries than themselves, but things are now different and if the Department is not able to get permanent men now at the salaries mentioned, they should raise the salaries all round to the same standard as in the other States and also give pensions, otherwise there are sure to be constant changes and the heads of the Department will never be able to get the work done in a satisfactory manner.

Yours, etc.,

JUSTICE.

Sir,—“Equity’s” letter of October 18 might have been amplified. The Victorian Lunacy Department, always nigardly as regards the salaries of its medical officers, offers little inducement to men wishing to join its service. South Australia recently advertised for a junior medical officer at £500 and allowances, £56 a year more than a Victorian senior medical officer of 10 years’ experience.

The recent promise of consideration given the B.M.A. in connexion with this matter looks like being shelved and it is to be hoped that the gentlemen concerned will not let the matter drop. The Lawson Government has certainly made its mark in procrastination and frequently solves its difficulties by allowing them to fizzle out. It is certainly time that the Association took a strong stand. The fixing of medical salaries by the public service commissioner is in itself most unsatisfactory. The value of a medical man’s work can only be assessed by a medical man and it is an opportune moment for the B.M.A. to demand a fair remuneration for work which in itself is not over-attractive.

Yours, etc.,

“ALIENIST.”

THE MEDICAL OFFICERS’ RELIEF FUND.

Sir,—The movement for raising £50,000 for the relief of members of the medical profession in Australia who have suffered serious personal loss through enlisting for active service overseas in the A.A.M.C., seems to be making only fair progress.

It is a saddening thought that some of these men will never return, others endure physical suffering, as well as pecuniary loss, while some, more fortunate than the rest, could hardly be classed under the last heading.

As subscribers must come forward in very much larger numbers to warrant the hope of raising the sum asked for, would it not be good policy, and the right one, to give through *The Medical Journal* to those who are invited to support the Fund definite information as to the number of cases requiring help and also the nature of the cases calling for such assistance? Such information, in fact, as may be calculated to enlighten and stimulate the practical sympathy of those who may be feeling that authoritative data should be forthcoming as a basis for a convincing appeal.

There is the question, too, of the extended administration of the Fund, whether it should not be placed, for business efficiency, under the control of a trustee company, which would be advised by a committee elected periodically by the subscribers?

Those who give like to think that their gifts are wisely used and the points referred to in this note are matters that count in gaining the support and sympathy which are so much to be desired.

Yours, etc.,

BETA.

October 21, 1919.

GOVERNMENT MEDICAL OFFICERS.

Sir,—Might I suggest through your columns a means of giving assistance to returned medical officers? I refer to the appointment of government medical officers in the various districts.

Their appointment at the present time falls to the oldest resident medical man in a town, who is, in most cases, established and independent of the appointment and, as glaringly shown during the recent epidemic, not by any means always fitted for the position.

As the returned men have had considerable experience in the duties which this appointment involves, their appointment to the office appears to be a singularly reasonable proposition which will fulfil two essential obligations, viz., our responsibility to returned men and the removal of the appointment from any possibility of undue influence.

Yours, etc.,

M.

October 26, 1919.

Books Received.

SURGICAL TREATMENT: A PRACTICAL TREATISE ON THE THERAPY OF SURGICAL DISEASES FOR THE USE OF PRACTITIONERS AND STUDENTS OF SURGERY. by James Peter Warbasse, M.D., in three volumes, with 2,400 illustrations; Volume III.: 1919. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; Royal 8vo., pp. 861, with 864 illustrations. Price per set of three volumes and index volume, £5 10s.

COMPLETE INDEX TO VOLUMES I., II. AND III. OF WARBASSE'S SURGICAL TREATMENT: 1919. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; Royal 8vo., pp. 123.

AN OUTLINE OF GENITO-URINARY SURGERY. by George Gilbert Smith, M.D., F.A.C.S.; authority to publish granted by the Surgeon-General, U.S.A.: 1919. Philadelphia and London: W. B. Saunders Company; Melbourne: James Little; Demy 8vo., pp. 301, with 71 illustrations. Price, Cloth, 14s. 6d. net.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

The undermentioned have been registered under the provisions of the *Medical Act, 1912 and 1915*, as duly qualified medical practitioners:—

Brookes, William Langley, M.B., 1919, Univ. Sydney, 16 Livingstone Road, Petersham.

Freeman, Thomas William, M.B., 1919, Univ. Sydney, Royal Prince Alfred Hospital.
 Langdon, John Frederick Britton, M.B., 1919, Univ. Sydney, Royal Prince Alfred Hospital.
 McElhone, Joseph Benedict, M.B., Mast. Surg., 1919, Univ. Sydney, Crick Street, Chatswood.
 McGregor, Keith Roswald, M.B., 1919, Univ. Sydney, Royal Prince Alfred Hospital.
 Mitchell, Brenda Alleen, M.B., 1919, Univ. Sydney, Mater Misericordie Hospital.
 Murray, Gerald Aubrey, M.B., 1919, Univ. Sydney, Cheltenham Road, Beecroft.
 Reed, Eric Burton, M.B., Mast Surg., 1919, Univ. Sydney, Wilson Street, Redfern.
 Robertson, Enid, M.B., 1919, Univ. Sydney, 185 Military Road, Neutral Bay.

Medical Appointments.

Dr. Balcombe Quick (B.M.A.) has been appointed surgeon to in-patients and Dr. John Kennedy (B.M.A.) surgeon to out-patients at the Alfred Hospital, Victoria.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxiii.

Medical and Health Department of Western Australia: Medical Officer of Health and Assistant Inspector of Hospitals.

Renwick Hospital for Infants: Resident Medical Officer.

The University of Melbourne: Temporary Sub-Curator of the Museum of Pathology.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Friendly Society Lodges, Institutes, Medical Dispensaries and other Contract Practice. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Cloncurry Hospital.
TASMANIA. (Hon. Sec., Macquarie Street, Hobart.)	Medical Officers in all State-aided Hospitals in Tasmania.

Branch.	APPOINTMENTS.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.)	All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Balmalm United Friendly Societies' Dispensary. Canterbury United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Friendly Society Lodges at Lithgow. Friendly Society Lodges at Parramatta, Auburn and Lidcombe. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. Newcastle Collieries—Killingworth, Seaham Nos. 1 and 2, West Wallsend. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

Nov. 3 to 12—Vic. Branch, B.M.A.; nominations received for Council.
 Nov. 4—Tas. Branch, B.M.A., Branch and Council.
 Nov. 7—Q. Branch, B.M.A..
 Nov. 11—N.S.W. Branch, B.M.A., Ethics Committee.
 Nov. 12—Vic. Branch, B.M.A..
 Nov. 12—North Eastern Med. Assoc. (N.S.W.).
 Nov. 13—Vic. Branch, B.M.A. Council.
 Nov. 14—N.S.W. Branch, B.M.A., Clinical.
 Nov. 14—Q. Branch, B.M.A., Council.
 Nov. 14—S. Aust. Branch, B.M.A..
 Nov. 18—Tas. Branch, B.M.A., Branch and Council.
 Nov. 18—N.S.W. Branch, B.M.A., Executive and Finance Committee; Illawarra Suburbs Med. Assoc. (Annual).
 Nov. 19—W. Aust. Branch, B.M.A., Branch and Council.
 Nov. 25—N.S.W. Branch, B.M.A., Medical Politics Committee; Organization and Science Committee.
 Nov. 25—Vic Branch, B.M.A., ballot paper issued for election of office-bearers of Branch.
 Nov. 26—Vic. Branch, B.M.A., Council.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.
 Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.
 All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney.